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Volume #2



Ministry of
Consumer and
Commercial
Relations

AN IMPROVED LAND REGISTRATION
SYSTEM FOR ONTARIO:
DESIGN CONCEPTS AND RECOMMENDATIONS

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Ontario

THE MINISTRY OF ECONOMIC DEVELOPMENT AND COMMERCE

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THE MINISTRY OF CONSUMER AND COMMERCIAL RELATIONS

AN IMPROVED LAND REGISTRATION SYSTEM FOR ONTARIO

VOLUME II

DESIGN

CONCEPTS AND RECOMMENDATIONS

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I

INTRODUCTION AND SUMMARY

A. INTRODUCTION

The Ontario Law Reform Commission (O.L.R.C.) published its report on land registration in March, 1971. The major recommendations of this report were:

- an improved land titles system should be the sole system for land registration in Ontario;
- with limited exceptions, claims against land should be registered to be effective;
- a coordinate control system should be established and used for indexing parcels and to record the location of monuments; and
- a computer system should be used for land registration.

To develop its position regarding these recommendations, the Ministry of Consumer and Commercial Relations created the Land Registration Management Committee (L.R.M.C.) in September, 1972. In turn, the L.R.M.C. assigned project teams to:

- research the recommendations; and
- develop programs and recommend policy.

From 1973 through 1975, project teams completed studies in the legal, survey and systems areas. Team members also attended several national and international conferences relating to land registration and information systems. The teams conducted a survey of land registration activities in other jurisdictions. Based upon these findings, several locations were visited to observe operating systems and study significant development projects.

In October, 1976, a draft POLARIS (Province of Ontario Land Registration and Information System) Concepts Report was presented to the L.R.M.C. Further work was required to finalize the report. Therefore, in January, 1977, the Committee formed the current project team to complete the POLARIS Report in three volumes:

- Volume I - an executive summary;
- Volume II - this report, to deal with the concepts of land registration; and

- Volume III - the working papers and technical details for design and implementation.

This report, Volume II, presents the information required for decision-making. Policy questions are examined in detail. Technical questions are also discussed, but supporting details are left for Volume III.

This initial Chapter of Volume II presents the Terms of Reference for the project team. It also summarizes the study findings, recommendations and implementation plan. Later Chapters discuss:

- background relevant to the study;
- the current situation in the land registration system;
- problems and issues facing the system and its users;
- policy, service and system related considerations;
- costs and benefits of proposed system improvements; and
- recommendations and an implementation plan.

B. TERMS OF REFERENCE

The project team was given two major objectives:

- review of the preliminary POLARIS Concepts Report dated October 29, 1976; and
- completion of the POLARIS system study itself.

A primary concern was to review prior work and produce an acceptable report. To do this, the POLARIS systems study requirements must also be considered. Thus, Terms of Reference defining two specific but closely related requirements were drafted.

On April 25, 1977 the L.R.M.C. approved the following Terms of Reference:

1. Project LRMC-9, POLARIS Concepts Report Review

This project is to review, organize and augment the October 29, 1976 POLARIS Concepts Report. It will provide a complete response to the Ontario Law Reform Commission recommendations in sufficient detail to satisfy the Land Registration Management Committee of the Ministry of Consumer and Commercial Relations.

Three separate report volumes are to be produced.

(a) Volume I - An Executive Summary

This "informative" report is a precis, or executive summary of the Concepts Report. Significant aspects of the detail reports (Volumes II and III below) are to be presented, in overview, to inform a non-expert reader.

(b) Volume II - Concepts Report

This "action" report deals with the requirements, constraints, policies and procedures associated with the new system. It is an action (or decision) document in that the requirements and impacts of change are clearly defined. Firm recommendations and their implications are to be clearly stated. The report shall be a definitive statement of "what is to be".

(c) Volume III - Design and Implementation Working Papers

This "technical" report defines the technological support mechanisms to be used with the preferred concept. It also provides the analytical basis for estimates or alternatives discussed in Volume II.

In preparing these reports, the study team must also satisfy the systems study Terms of Reference, below.

2. POLARIS Systems Study

In September 1972, the Land Registration Management Committee drafted the following Terms of Reference for the systems study:

"To establish a system of management of registered information regarding ownership, description and encumbrances relating to land parcels in Ontario, to provide a means of retrieving this information upon request, and to assure the accuracy of this information".

This was further refined by the Committee in May 1974. The following aspects of the system were to be covered.

(a) Requirements Related

- (i) Identification of the nature, form and purpose of the information to be stored and retrieved.

- (ii) An outline of the processes by which this information is generated, gathered, processed, stored and retrieved.
 - (iii) Security of data, financial and operational controls and audit trails.
 - (iv) Operational policies needed to develop the system details.
 - (v) Statutory and legal considerations.
 - (vi) System performance requirements.
- (b) Implementation Related
- (i) Equipment needs, including the possible use of computers.
 - (ii) Estimated costs of development, implementation, and operation of the system; estimated costs to the user public.
 - (iii) An implementation strategy which would facilitate the implementation of the new system and the conversion from registry and land titles, and which would provide short-term benefits where possible to the operation of the present systems.

Although not explicitly requested above, the price/performance characteristics of various implementation alternatives must be explored.

The study was completed in accordance with these Terms of Reference. Major findings and recommendations are summarized in the next two sections.

C. SUMMARY OF FINDINGS

The Province operates two land registration systems:

- the registry system, started in 1795, which provides for storage and safeguarding of title documents; and
- the land titles system, started in 1885, which guarantees title in addition to the storage and safeguarding function.

Theoretically, both systems are available throughout the Province. However, there is little registry system activity in the north. The land titles system is still unavailable in many rural counties in southern Ontario. Of the 65 land registry offices in Ontario, 32 operate strictly under the registry system, 2 operate strictly under the land titles system and the remaining 31 offices operate under both systems.

About 70% of Ontario's 3,100,000 parcels of land are recorded under the registry system. The remaining 30% are in the land titles system.

The registry system abstract index is a guide to locating documents. The documents themselves must be examined to determine their legal effect and the state of the title. In contrast, the land titles parcel register is a statement of title. The legal effect of a dealing is confirmed when the entry in the parcel register is signed.

Registry system registration requirements are straightforward and well understood. The system is simpler and less costly to administer than the land titles system. Land titles system registration requirements are more complex. The acceptability of a document is often at the discretion of the land registrar. This creates an air of uncertainty and can lead to conflicts between the system user and office staff. However, land titles system searches are generally uncomplicated. Many registry system searches are difficult.

Most local office activities are clerical and at a low level of mechanization. Standard office equipment such as typewriters, photocopiers and cash registers are used. Computer-related equipment and automatic processes are not. All offices operate with considerable autonomy.

Copies of plans are kept available for the use of, and sale to, system users. Original documents, abstract indexes and parcel registers are provided to the public. Alterations to documents or index books are not easily detected. Lost documents may be replaced from back-up microfilm or "copy books". Lost index books or pages cannot easily be replaced.

The major users of the land registration system are:

- the legal profession;
- the survey profession; and
- the agencies or organizations requiring access to large volumes of land information.

The legal and survey professions utilize the system primarily for:

- boundary and title information searching; and
- plan and document registration.

Both can obtain only part of the information they require from the system. Many unregistered title interests and survey plans exist. Therefore, lawyers and surveyors must consult other files located elsewhere.

If the property is part of a lot in the registry system, all of the entries and many of the original documents or plans must be examined to determine which affect the property. Thus, the search may involve:

- searching back through a succession of books;
- searching in various places in one book; and
- analyzing hundreds of entries to identify the few documents or plans which will have to be examined.

Some users deal with large volumes of information and large numbers of land parcels. At present, these bulk users must approach the land registration system in the same manner as a user interested in only a single parcel record. Multiple parcel projects must be searched one parcel at a time. For many bulk users, it is less time-consuming to purchase information from a commercial agency than to approach the land registration system directly.

The legal framework for land registration is complicated and demanding. Common criticisms are:

- too much information must be prepared;
- some land registration legislation is difficult to use and administer; and
- some obsolete requirements should be removed and legislation improved.

Some guarantees, or affirmations, are offered by both systems. However, the degree of assurance provided requires clearer definition.

The land registration system is essentially a manual operation. This has two consequences:

- the system is labour intensive; and
- there is a greater tendency towards non-standardized documents and office procedures.

By combining related problems and breaking them into their simplest form, the overall requirements for land registration system improvement become apparent. There are requirements and potential improvements in ten major areas:

- improvement of legal concepts;
- assurance and compensation;
- complete property information;
- property identification;
- information quality controls;
- information retrieval;
- records maintenance;
- uniform and efficient system operation;
- potential for automation; and
- adequate staffing and funding.

Each of these problem areas is addressed by recommended system improvements.

D. SUMMARY OF RECOMMENDATIONS

The basic recommendations of this report are:

- the Province should retain responsibility for land registration;
- both the registry and land titles systems should be retained, at least in the short term;
- both systems should be improved to the extent possible;
- a single system for land registration should be adopted if, after improvements to both, one system proves clearly superior; and
- five improvement "packages" should be implemented.

Because some improvements depend upon implementation of others, implementation strategy is constrained in some respects. This results in five major recommended improvement packages:

- legal system improvements;

- microfilm document and plan systems;
- certification in the registry system;
- computerized indexes, property maps and activity reports; and
- selective and aggregate information reports.

Many of the legal concepts that govern the land registration system can be improved. The legal system improvements not requiring equipment changes or major implementation effort include:

- amendments to The Registry Act to reduce the required search period and give immediate effect to discharges and expired interests;
- amendments to provide a more complete title record through registration of government liens and municipal clearance violations and removal of the title effect of Planning Act violations;
- clarification and improvement of the rules regarding title assurance, boundary assurance, adverse possession and compensation;
- selected changes to the law governing covenants and easements; and
- selected improvements to the provisions of The Land Titles Act governing cautions, notices and leases.

Other legal improvements are associated with the introduction of standardized, shorter documents and the cover page concept. These include:

- introducing a standardized cover page format;
- shortening and standardizing common documents; and
- reducing the number of affidavits required.

Introduction of microfilm is recommended to improve the document and plan records management systems for land registration. Indexed cartridge microfilm should be used for document storage. Aperture cards or microfiche should be used for plan storage. Original documents and plans should be removed from the local office and replaced with microfilm records.

Sixteen mm microfilm should be used for document storage. Thirty-five mm microfilm is required to accommodate the larger sized plans. Document microfilming should continue in the local offices. Plan microfilming should be performed in regional centres.

Certification in the registry system under The Certification of Titles Act provides an assured statement of ownership and encumbrances at a stated point in time. It eliminates the need for users to search beyond the point of certification. It can dramatically shorten and simplify searching. Certification of subdivision plans also eliminates the need to search in the unparcelized index. This further reduces search time and system workload. All new plans of subdivision entering the registry system should be certified. A retroactive certification program should be undertaken for previously registered plans.

The local offices should be automated to a large extent. This requires:

- regional centre computers for property map preparation and maintenance and production of indexes and activity reports; and
- installation of local office minicomputer equipment.

Dynamic property maps, should be prepared using regional centre computers to show each land parcel in the area served by the local office. These maps, containing 50 to 200 land parcels within easily recognizable boundaries such as roads, railways, rivers and other natural features should be available in the local office.

Unique land parcel identifiers should be assigned to each parcel shown on property maps. Each block throughout the Province should be assigned a unique number. Within each block, parcel numbers should be assigned sequentially to each parcel as it is identified and entered into the block parcel map. Since each block number is unique and parcel numbers are not duplicated within the block, a unique identifier for each land parcel results.

Ontario Coordinate System grid coordinates should be used for the property maps. This will provide accurate, coordinate based property maps which bear a direct relationship to the ground.

A total of 9 regional computer systems are proposed. Initially, each system would be used for property map preparation. Once the initial property maps are prepared, the regional systems would be used for property map maintenance, index page production and information reporting.

Once a unique number has been assigned to each land parcel, computerized processing of land parcel information becomes possible. Each local office should be provided with computer equipment. On a daily basis, the local office minicomputer would capture registration statistics from an intelligent cash register and registration abstract entries from a data entry terminal. These would be forwarded to the regional centre where activity reports and updated index pages would be produced. Index pages would be updated to reflect registration of new documents or plans and expiration of previously registered interests. New pages would be returned to the local office on a daily basis and filed as replacement pages in the index books.

The local office minicomputer would also contain information stored on a local disc storage device. The registration activity captured by the cash register would also be used to update this local office information. The disc file would contain:

- a record for each land parcel within the local office jurisdiction;
- a registration journal containing a record for each registration since the last update of the index pages; and
- deposit account information containing a record for each deposit or credit account user.

After payment of the required fee, the intelligent cash register terminal would automatically assign and print the registration number on the cover page of documents and plans. All pertinent registration data including fees, tax and type of document or plan would also be captured by the cash register terminal.

After registration, a copy of the cover page would be made available for subsearching at the counter. A second copy of the cover page would be used for abstract data entry.

As registrations are processed through the cash register, it would automatically update the local office disc files. Enquiry pads would be available to both office staff and system users to obtain information from these local office files. Entering a land parcel identifier (the block parcel number) on an enquiry pad would display the last registration processed against that land parcel. The display would also indicate if this registration took place after the last update of the index records. If so, a subsearch would be required. The registration number of the required cover page would be displayed on the enquiry pad. This allows fast and simple retrieval of cover page information from the cover page subsearch file.

Updating of land parcel information takes place as soon as the registration is processed by the cash register. Thus, the system user can be assured of up-to-date information during his subsearch. Moreover, if registrations have occurred since the last update of the index books, enquiry pads provide direct access to the cover pages which affect the land parcel being searched.

A number of new services would be offered by the system with implementation of the last improvement package, selective and aggregate information reports. The new services include:

- cross-reference indexes, to relate commonly used identifiers such as street addresses and owner names to the land parcel identifiers;
- a computerized writs of execution system, to allow judgement creditors to easily and quickly locate the lands of their debtors;
- complete operational activity reporting, to allow efficient statistical analysis of land parcel information; and
- selective and aggregate reporting for bulk users, to allow specialized searching and provide on-demand reporting from either property map or registration information.

These are important new services for many system users. Currently, some users maintain duplicate files of land registration information in order to approximate provision of these services. Elimination of these duplicate files would result in significant savings for system users, particularly other government agencies.

The costs and benefits of each of the above improvements have been analyzed in detail. A summary of these costs is given in the next Section.

E. IMPLEMENTATION PLAN AND FINANCIAL IMPACT

The costs and benefits of each of the five improvement packages have been calendarized over a 15-year period. A bar chart indicating the development, pilot project testing and implementation time frames for each package is shown in Figure 1, page 12. The corresponding annual cash flow for implementation of each package is shown in Figure 2, page 13.

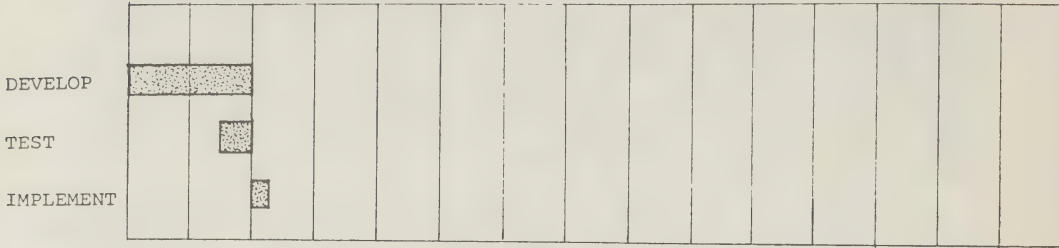
The effect of implementing all five packages must also be considered. Three methods of assessing the financial impact of implementation were used:

FIGURE 1 - IMPROVEMENT SCHEDULE

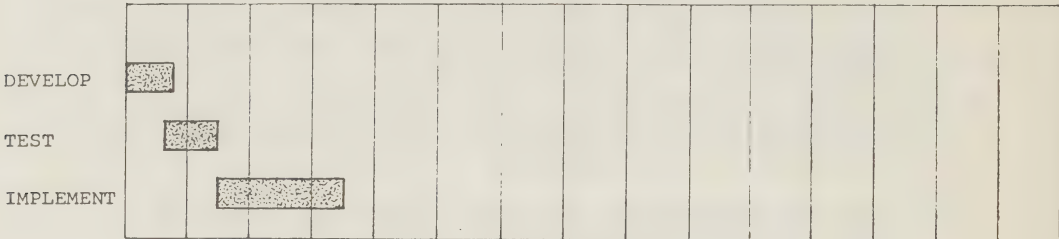
YEARS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

LEGAL SYSTEM IMPROVEMENTS



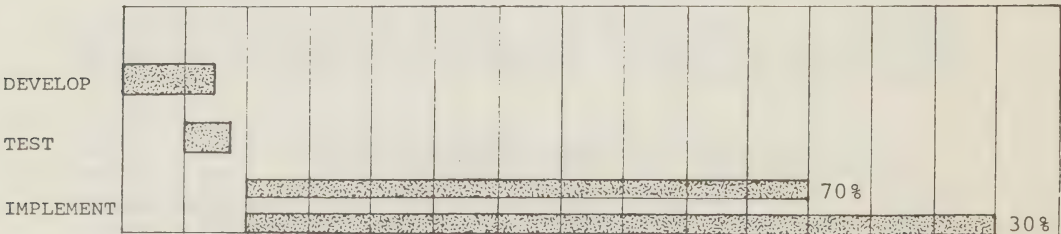
MICROFILM DOCUMENT AND PLANS SYSTEMS



CERTIFICATION IN THE REGISTRY SYSTEM



COMPUTERIZED INDEXES, PROPERTY MAPS AND ACTIVITY REPORTS



SELECTIVE AND AGGREGATE INFORMATION REPORTS

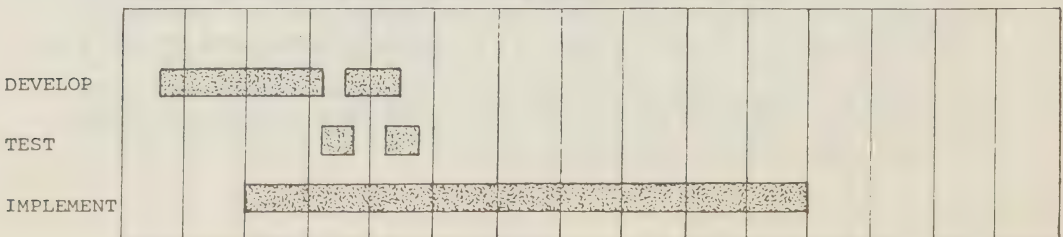


FIGURE 2 - ANNUAL CASH FLOW (IN \$ MILLIONS)

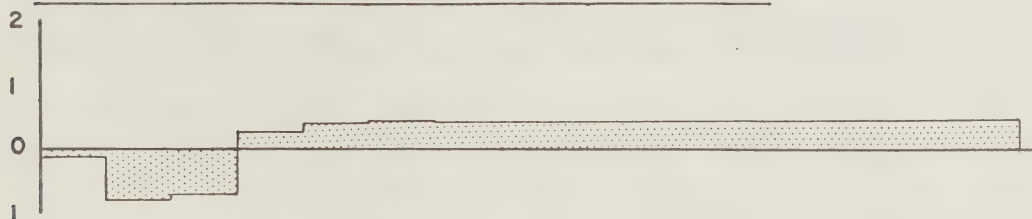
(A) LEGAL SYSTEM IMPROVEMENTS

YEAR

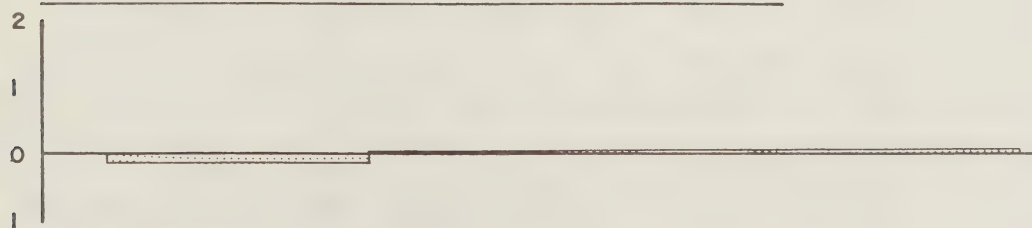
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



(B) MICROFILM DOCUMENT AND PLAN SYSTEMS



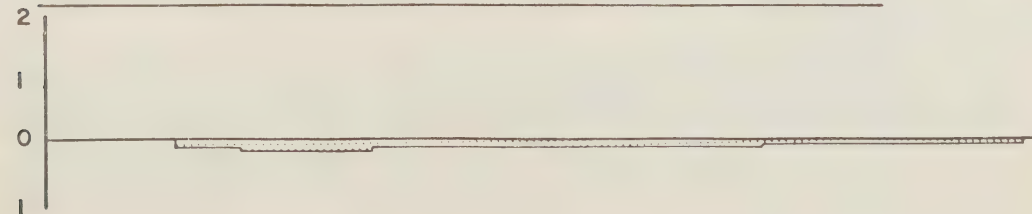
(C) CERTIFICATION IN THE REGISTRY SYSTEM



(D) COMPUTERIZED INDEXES, PROPERTY MAPS AND ACTIVITY



(E) SELECTIVE AND AGGREGATE INFORMATION REPORTS



- annual cash flow, based on 1977 dollars;
- discounted cash flow, using the current bond rate of 9% as a proxy for the cost of capital to be used in discounting; and
- discounted cash flow, including a factor for inflation, where a 6% inflation factor for both staff and equipment costs has been used to adjust the 1977 dollar estimates prior to discounting at 9%.

Figure 3, page 15, illustrates the annual cash flow for all improvements using the three measures of financial impact.

Figure 4, page 16, illustrates the cumulative cash flow using these three methods. Here, the break even point for implementation of the improvements is shown, being the year in which the net cost figures become net benefit figures. The break even point occurs in year 9 or 10 depending upon the method used for calculation of the financial impact. Thus, implementation of all five improvement packages together is cost justified. Selection of the packages to be implemented becomes a policy rather than a financial decision.

System improvements could also be implemented on a phased start-up basis. For example, additional funding for development and implementation of only the legal package might be granted. The system savings obtained from implementation of this package could then be used to finance implementation of subsequent packages. The financial impact of this implementation strategy is shown in Figures 5 and 6, pages 17 and 18. It extends the implementation period over a 20-year time horizon.

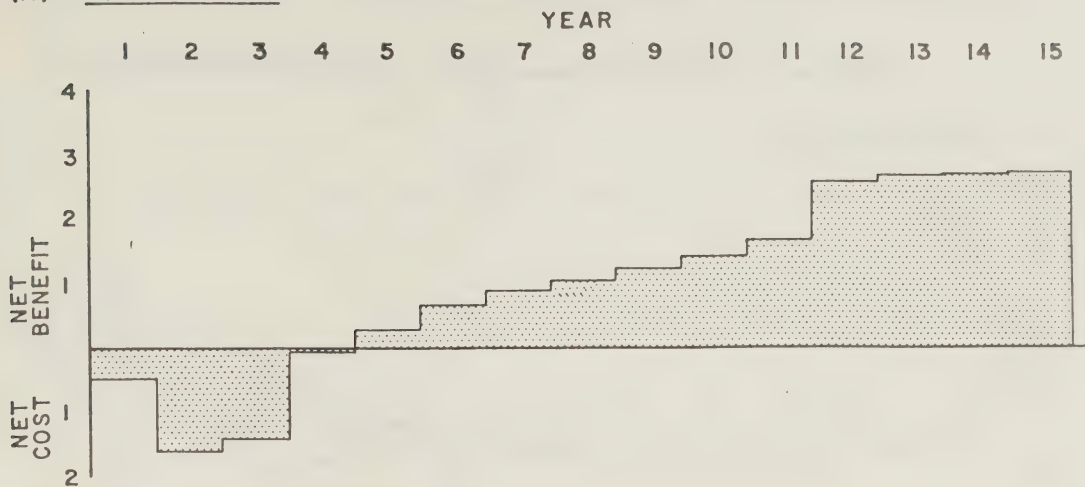
These two examples set the financial and time limits for implementation discussion. The first case establishes the minimum time for system implementation. The second case establishes the minimum investment. Within these bounds, implementation of each improvement package can be assessed.

For illustration, one further analysis has been performed. Figures 7 and 8, pages 19 and 20, present the annual and cumulative cash flow with an assumed funding of \$500,000 per year for each of the first four years of the program. In subsequent years, the savings achieved from system improvements have been used to finance completion of the program.

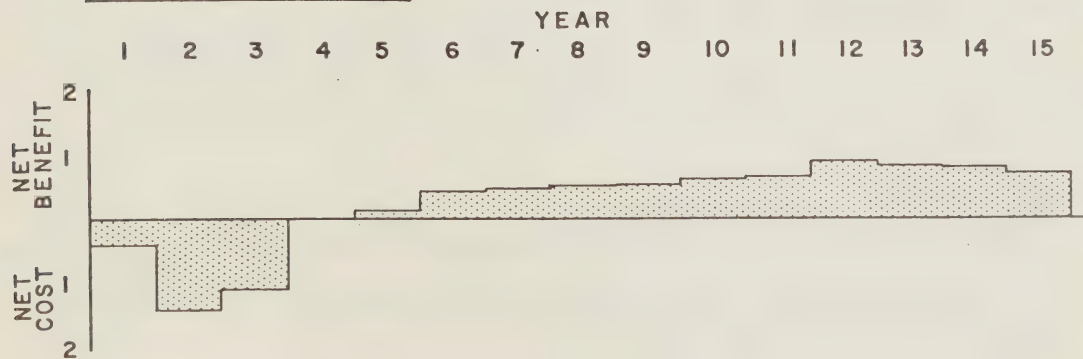
In terms of small initial investment and rapid payback, the most attractive implementation plan is that of funding the improvement program at \$500,000 per year for each of the first four years. This represents an increase of about 4% in the operating budget for the first four years and a reduction of 20% of the projected operating budget in the fifteenth year.

FIGURE 3 - ANNUAL CASH FLOW (IN \$ MILLIONS)

(A) UNDISCOUNTED



(B) DISCOUNTED AT 9%



(C) INCLUDING 6% INFLATION

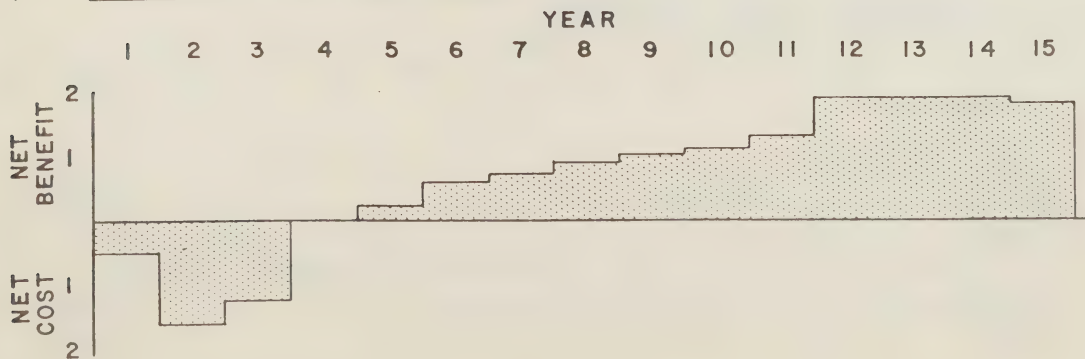
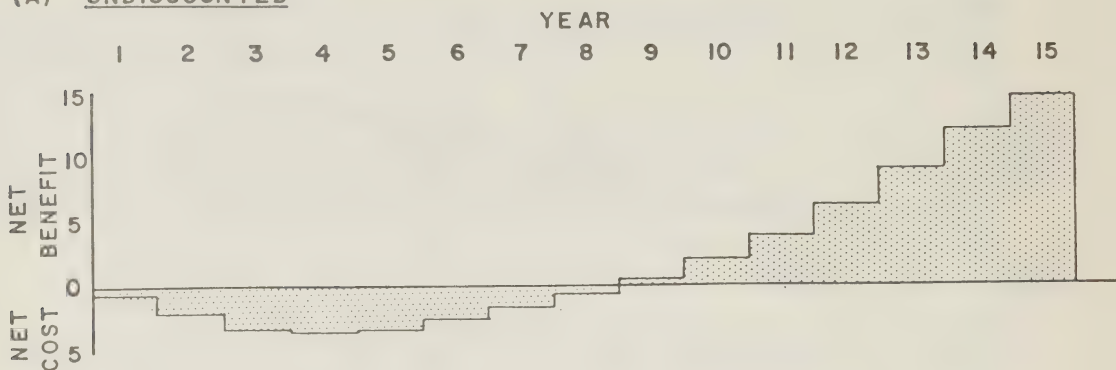
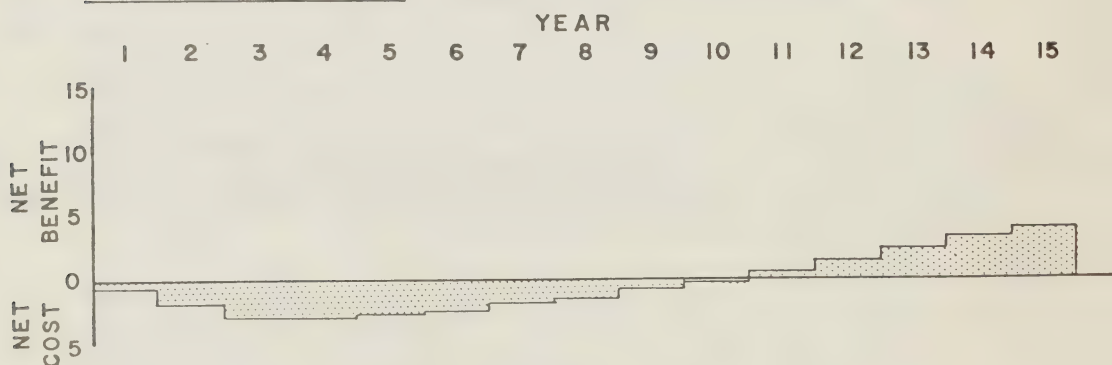


FIGURE 4 - CUMULATIVE CASH FLOW (IN \$ MILLIONS)

(A) UNDISCOUNTED



(B) DISCOUNTED AT 9%



(C) INCLUDING 6% INFLATION

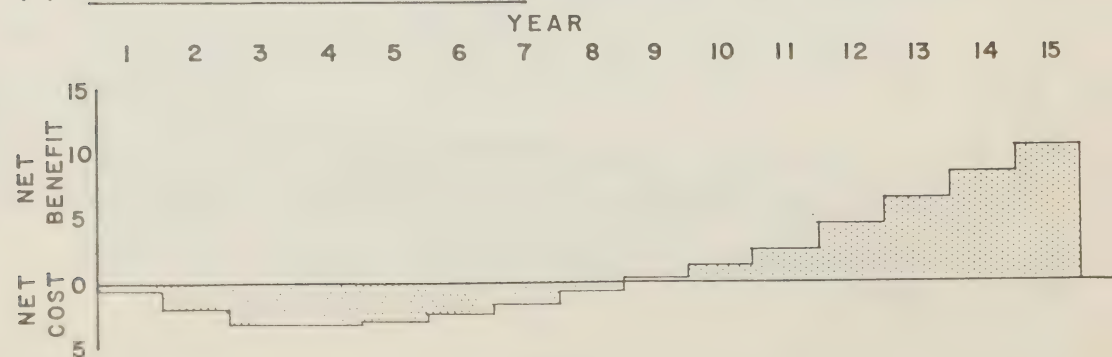
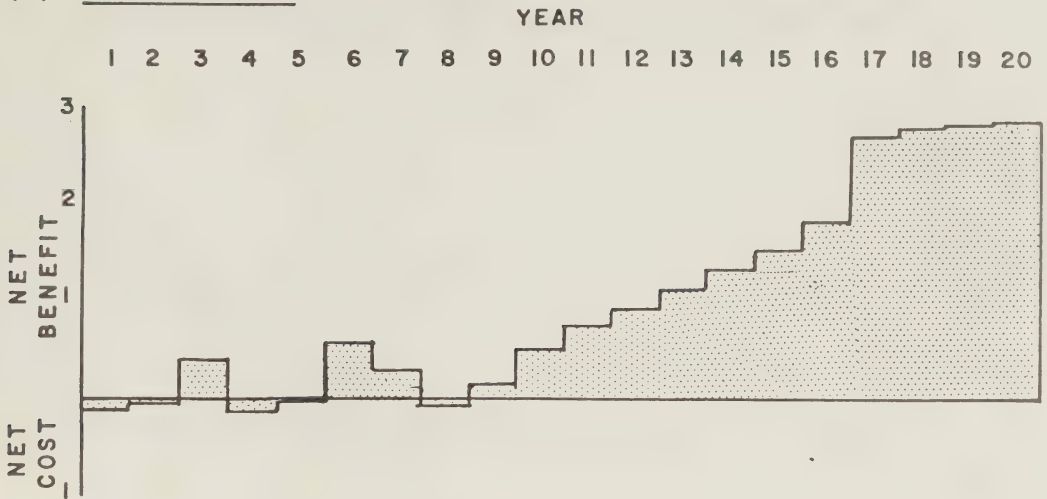


FIGURE 5 — FUNDING FOR LEGAL PACKAGE ONLY
ANNUAL CASH FLOW (IN \$ MILLIONS)

(A) UNDISCOUNTED



(B) DISCOUNTED AT 9%



(C) INCLUDING 6% INFLATION

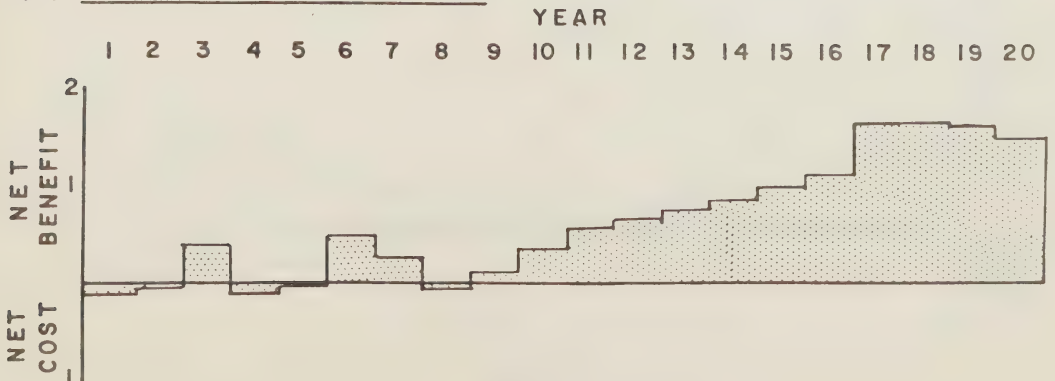
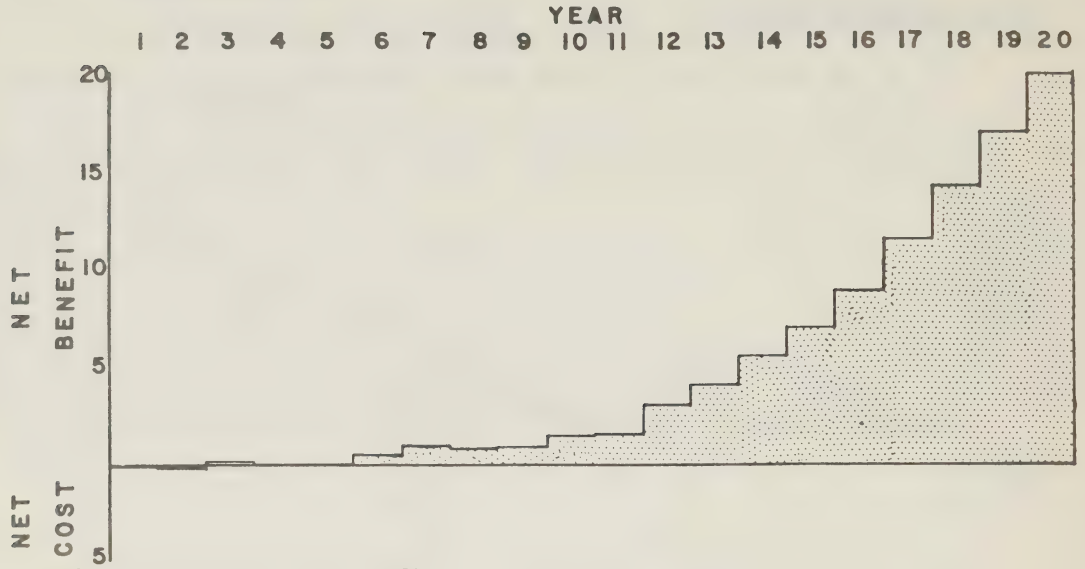


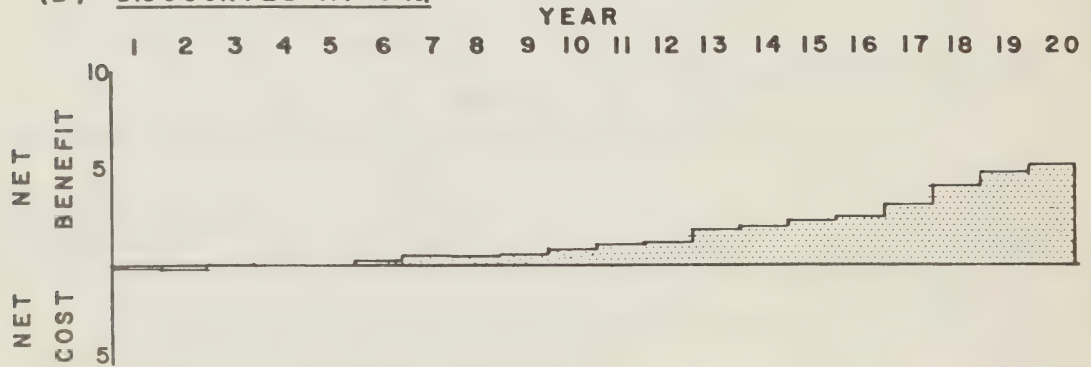
FIGURE 6 — FUNDING FOR LEGAL PACKAGE ONLY

CUMULATIVE CASH FLOW (IN \$ MILLIONS)

(A) UNDISCOUNTED



(B) DISCOUNTED AT 9%.



(C) INCLUDING 6% INFLATION

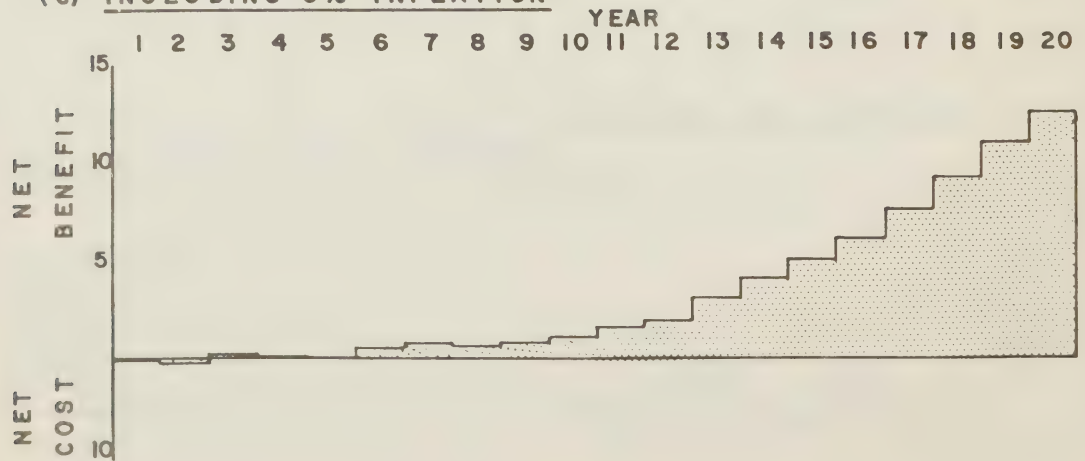
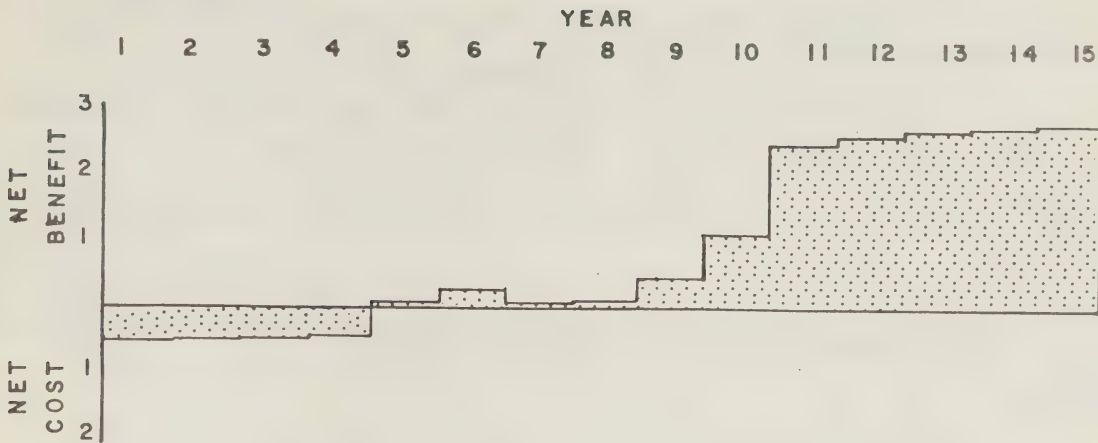
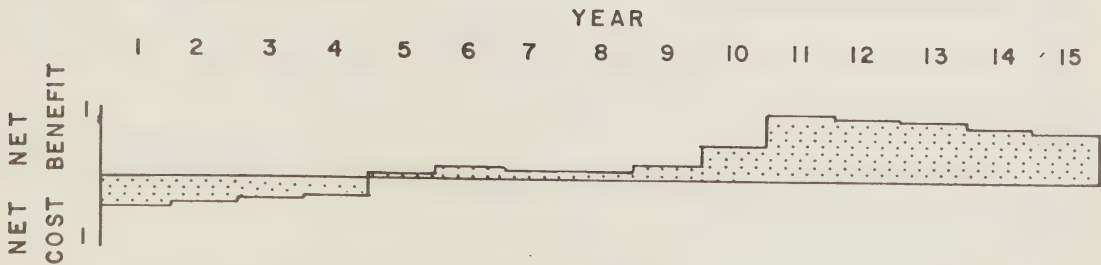


FIGURE 7 — FUNDING \$500,000/YEAR: FIRST 4 YEARS
ANNUAL CASH FLOW (IN \$ MILLIONS)

(A) UNDISCOUNTED



(B) DISCOUNTED AT 9%



(C) INCLUDING 6% INFLATION

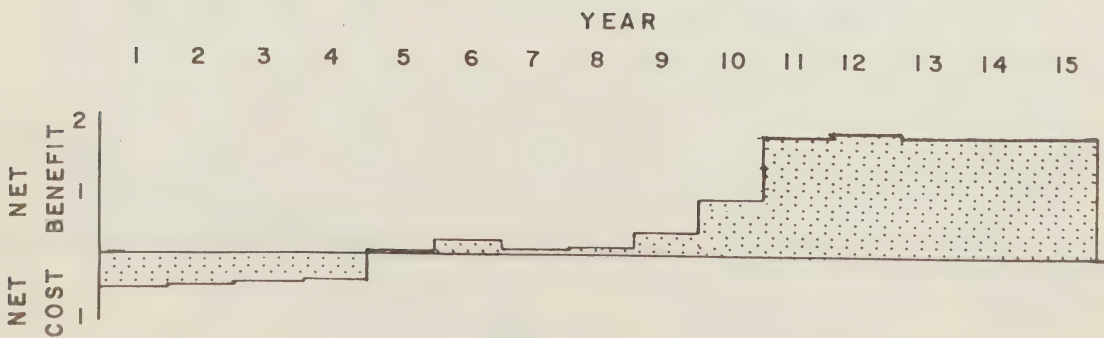
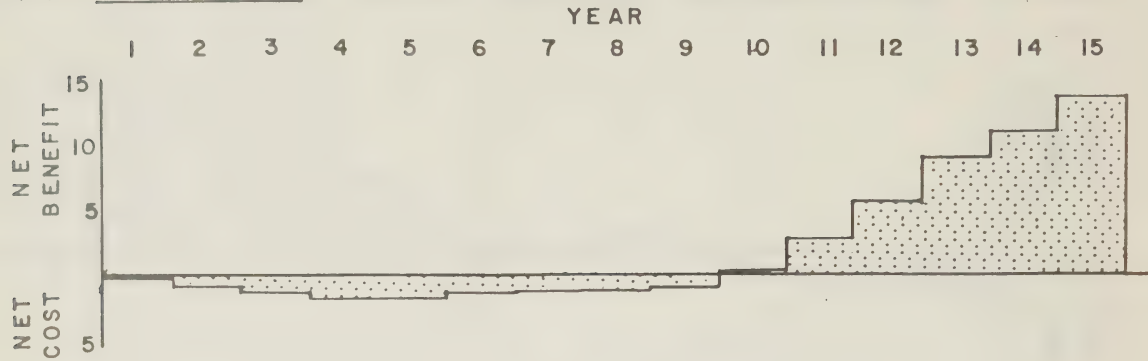
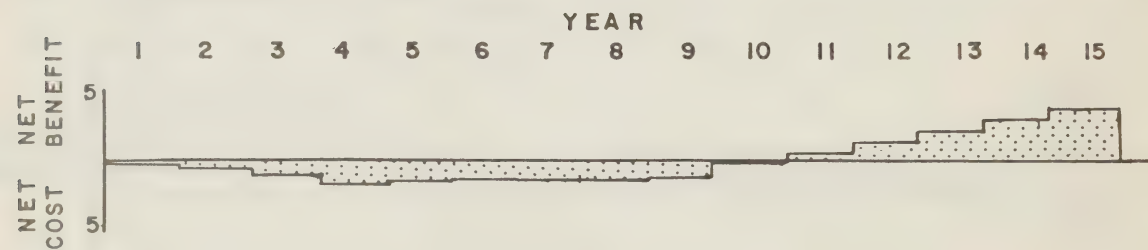


FIGURE 8 — FUNDING \$500,000/YEAR: FIRST 4 YEARS
CUMULATIVE CASH FLOW (IN \$ MILLIONS)

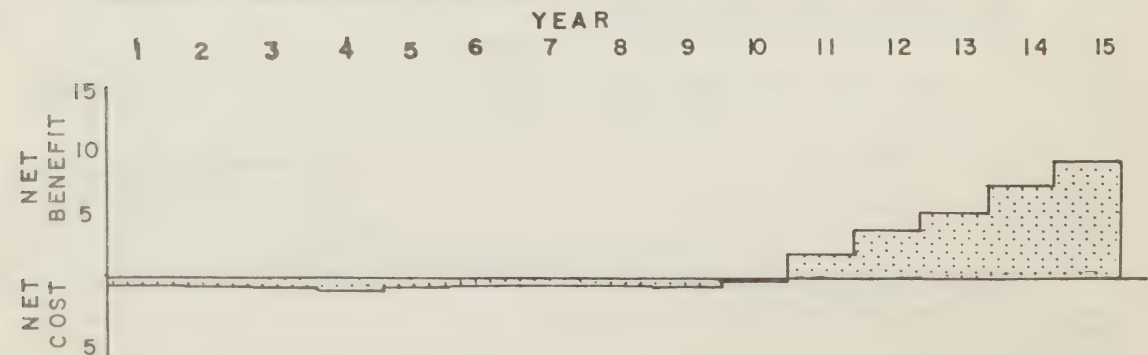
(A) UNDISCOUNTED



(B) DISCOUNTED AT 9%



(C) INCLUDING 6% INFLATION



The previous analyses were concerned with the incremental effect on operating cost. The relationship of investment and benefit to operating cost for each of the three cases is shown in Figure 9, page 22. Here, the effect of each of the three implementation strategies is illustrated. In each case, it is assumed that operational cost savings are available to finance implementation. Essentially, this means that the current operating budget level is maintained until financing of the one-time costs of implementation is well advanced.

The projected revenue based on the current fee schedule increases substantially in relation to the projected operating cost. In addition, revenue from additional services can be expected. This has been projected and further increases the difference between operating costs and revenue.

It should also be noted that an increase of about \$1.00 per registration could entirely fund the development and implementation of the proposed system improvements. This modest fee increase would generate revenue in excess of \$1,000,000 per year over the life of the project. Alternately, the Province could choose to increase fees coincident with installation of improved services. Again, the costs for the new services would be more than offset by the increased fee revenue.

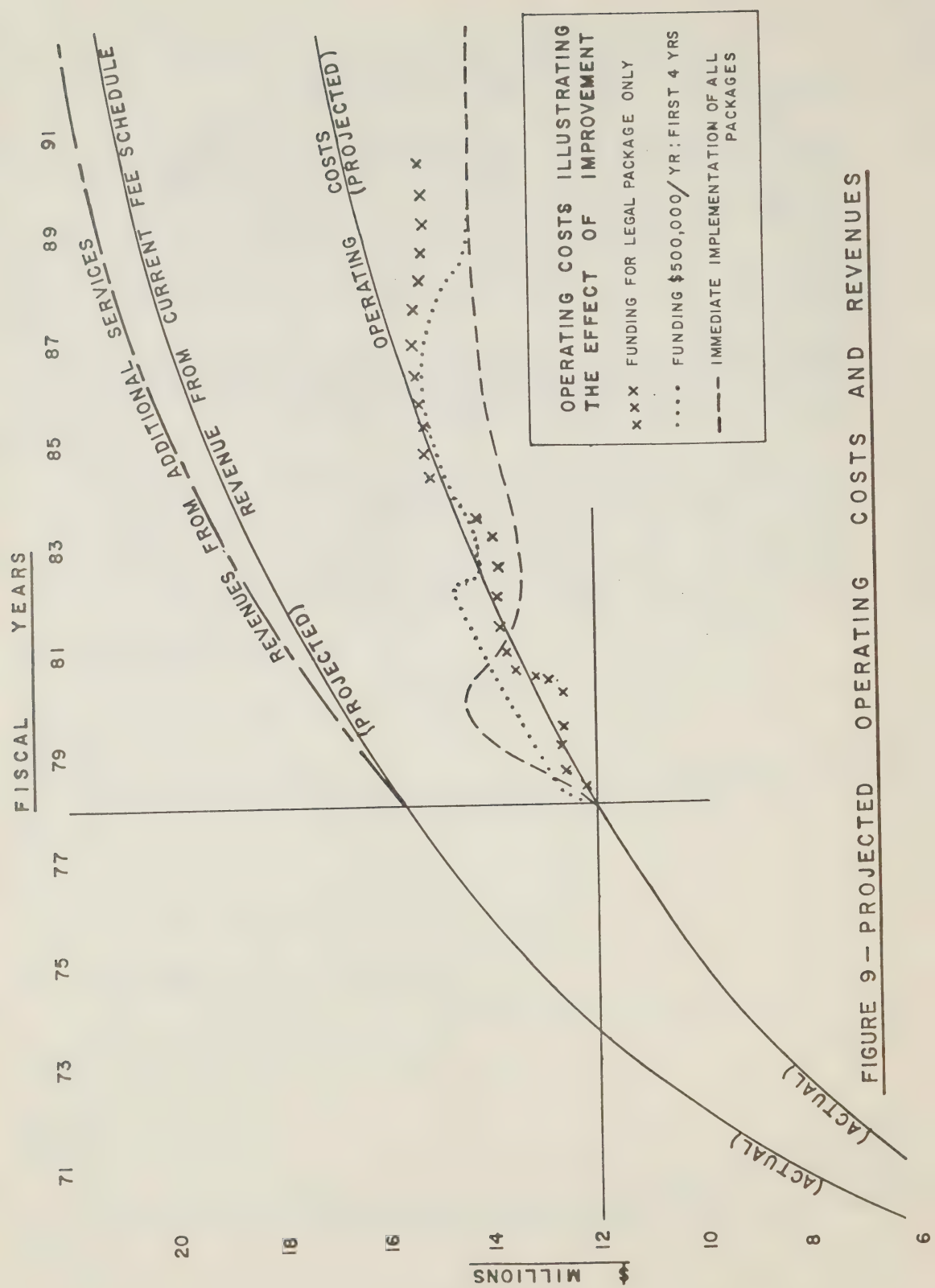


FIGURE 9 - PROJECTED OPERATING COSTS AND REVENUES

II

BACKGROUND TO THE STUDY

A. THE NEED FOR THIS STUDY

Throughout history land has been man's most prized possession. It is the source of all his material wealth. To protect this wealth, individuals have come to rely on their government to provide a system of safeguarding interests in land.

For almost two hundred years the Province of Ontario has provided a land registration system to protect interests in land. Common law, legislation and regulations have created security in land ownership. Local offices have been established to register information on land ownership and land interests. There are now sixty-five offices across the Province where these records are maintained and can be viewed by the public.

The Ontario Law Reform Commission in its report on land registration acknowledges that "existing systems have given reasonable security for the ownership of interests in land, and reasonable scope and security for creation and transfer of these interests". However, the report also states that "comprehensive reform of the arrangements for land registration in Ontario is urgently needed". The Commission felt that "the existing arrangements have worked only because they have been made to work by the continuous care of lawyers, surveyors and civil servants, at considerable cumulative cost".

The Law Reform Commission makes many recommendations for change. It also recognizes the need to balance useful experience from the past with new technology. Reform and improvement of the land registration system has occurred continuously since passage of the first Registry Act in 1795. The task at hand is to look into the future. The system exists to serve those with interests in land and those requiring a knowledge of these interests. Improvements can be made. Radical or evolutionary change is possible.

The challenge is to select changes or improvements which are both beneficial and practical. The ultimate objective must be improved service to the public at a cost government and private users can afford. To achieve a proper balance between change and stability an understanding of the history of land registration in the Province and the experience of other jurisdictions is necessary. These are discussed briefly in the following sections of this Chapter.

B. LAND REGISTRATION IN ONTARIO

In Ontario law there are two major categories of property:

- real property; and
- personal property.

Land is classified as real property. All patented land is now governed by either the registry system or the land titles system.

The division of land into ownership units can be considered the production or manufacture of land parcels. Ontario has been divided into approximately 3,100,000 land parcels. To be dealt with, each must first be described. This is done in two ways:

- by drawing the parcel on a plan of survey and assigning a designation to it; or
- by describing verbally the boundaries that form its perimeter, a so-called "metes and bounds" description.

Registration of a survey plan establishes an official record of a land parcel description. Registration of the first ownership interest document attaches a legal significance to the description. It is at this point that the manufacturing of a land parcel is completed. The manufacturing of land parcels is illustrated in Figure 10, page 25.

An assigned identifier can remain unchanged through many ownership changes. Only when the boundaries of a land parcel are altered to divide or consolidate land ownership is there a need to change the identifier. Usually this is accomplished by filing a new survey plan to manufacture a new land parcel.

The methods for creating ownership and other interests in patented land are well established. Figure 11, page 26, illustrates the methods by which public and private users establish those interests.

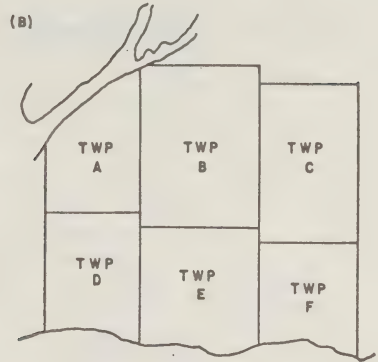
Individuals in the private sector usually deal with a lawyer or a surveyor having the required expertise and qualifications.

Although land registration system records are in the public domain, few private individuals are aware of this. Fewer have the expertise necessary to deal with the system.

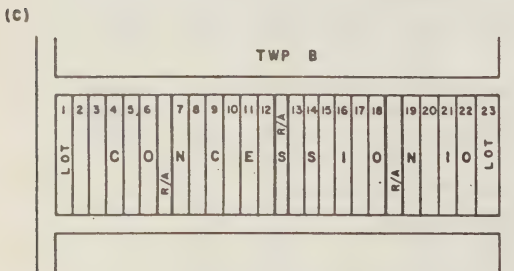
FIGURE 10
THE MANUFACTURING OF LAND PARCELS



THE PROVINCE IS DIVIDED INTO
DISTRICTS AND COUNTIES....

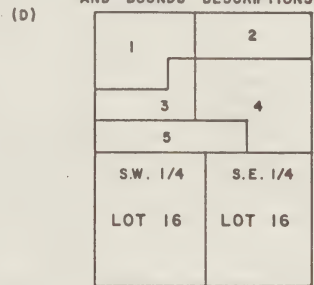


COUNTIES AND DISTRICTS ARE DIVIDED INTO
TOWNSHIPS....

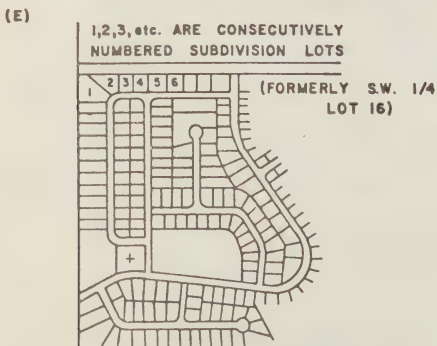


TOWNSHIPS ARE DIVIDED INTO CONCESSION AND
LOTS....

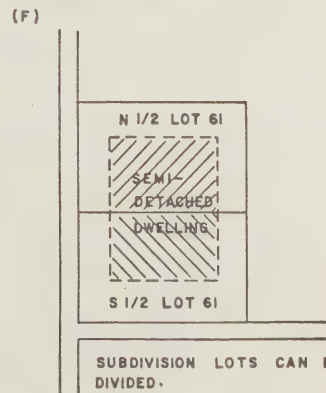
LOTS ARE DEFINED BY METES
AND BOUNDS DESCRIPTIONS.



TOWNSHIP LOTS CAN BE LAND
PARCELS. THEY CAN ALSO BE
DIVIDED INTO SMALLER LAND
PARCELS....

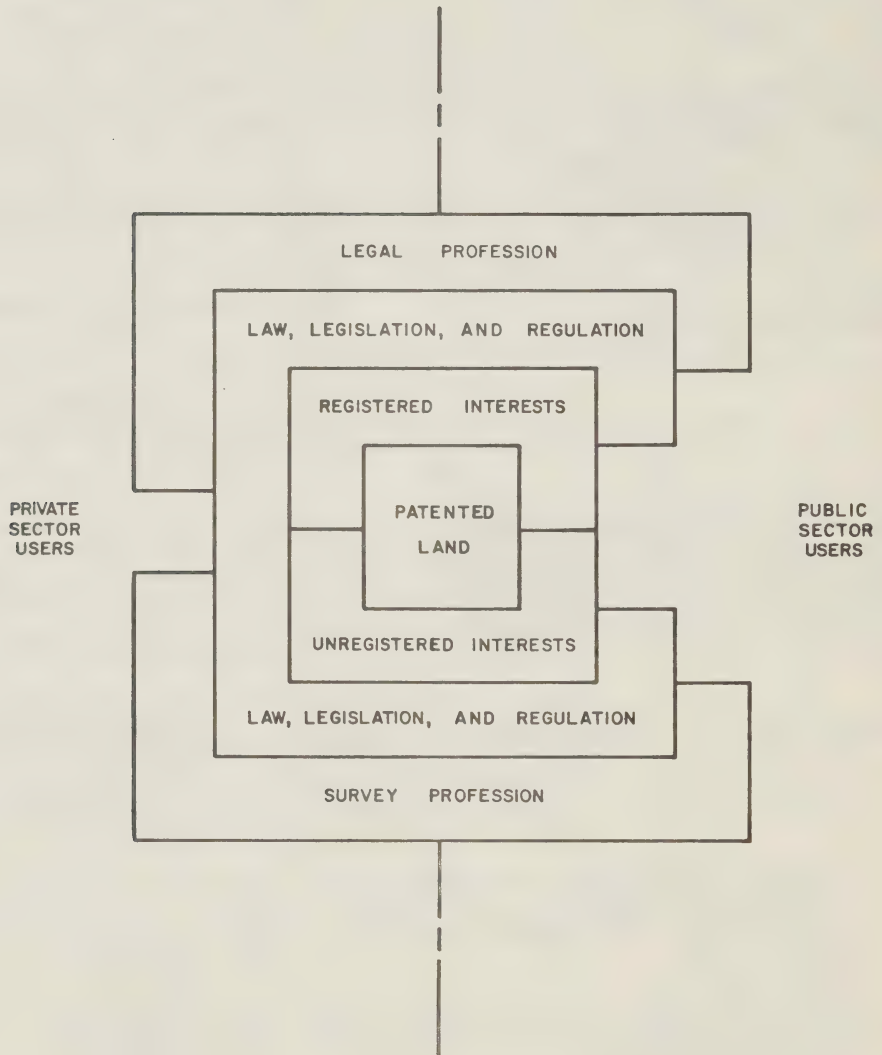


TOWNSHIP LOTS OR PARTS OF LOTS ARE LAID OUT
INTO REGISTERED PLANS OF SUBDIVISION
AND INTO SUBDIVISION LOTS....



SUBDIVISION LOTS CAN BE
DIVIDED.

FIGURE II.
ESTABLISHMENT OF INTERESTS IN PATENTED LAND



Private individuals, in person or through their lawyers or surveyors, can establish registered or unregistered interests in land. The methods by which these are established are governed by law, legislation and regulations. This provides a well defined and structured environment in which land dealings can proceed with some guarantee of validity.

On the other hand, public sector users may establish new registered or unregistered interests in land through the legislative process. Fortunately, public sector users normally deal with land through the requirements of the land registration system. Although they may deal with more than a single property at one time, they function in essentially the same manner as private sector users. Records are requested and interests are registered in accordance with the appropriate system rules.

Often public sector users will retain their own professional legal or survey staff. The professional staff are familiar with the land registration system. They provide procedures which allow non-professional staff to deal with land registration system requirements. Thus public sector users may use legal and survey para-professionals in routine dealings with the land registration system.

1. The Registry System

The registry system is the older of Ontario's land registration systems. The first Registry Act was passed in 1795. The registry system provided government storage and safeguarding of title documents. This is still a central feature of the current system.

The original Act provided for alphabetical indexing by grantor and grantee names. The actual documents registered were referred to as "memorials". The original documents were retained by the parties themselves. Memorials were, in effect, notices of those documents. Normally the memorials contained a written description of the property. Over the years, the registry system in Ontario has been considerably modified. The more significant changes were:

- 1849 or earlier legislation required that town and village lots on plans be numbered and the plans registered.
- 1865: An abstract index organized on a geographic basis was authorized. By that time, most of the settled parts of Ontario were covered by a framework of townships, road allowances, concessions and lots which were surveyed to some extent on the ground. Land parcels could now be described by referencing them to the appropriate township lots.

The geographic index became the primary record although alphabetic indexing continued until very recently. Notice filing was abandoned by requiring the registration of original documents.

- 1887: The Custody of Title Deeds Act was passed. This later became The Custody of Documents Act and is now Part II of The Registry Act. It allows for depositing of almost any type of document relating to the title to land. However, it does not give notice of anything that is deposited. It makes documents available to explain apparent title problems on the abstract index. It also allows for survey plans of general interest but not specifically referring to registered land division to be deposited and made available for public viewing.
- 1929: Provisions requiring mortgages discharged over ten years and mechanics' liens over two years to be struck out of the abstract index were added to the Act.
- 1929: The Investigation of Titles Act, now Part III of The Registry Act, was passed. This legislation shortened the time period required for a title search to forty years. It is still necessary, however, to search the records beyond forty years for description information. Frequently a search back to the original crown grant is necessary for survey purposes.
- 1958: The Certification of Titles Act was passed. Certification under the Act, in effect, establishes a new root of title. However, unlike the land titles system, the administration assumes no responsibility for the effectiveness of subsequent dealings. Certification under this Act is now compulsory in only one circumstance: land included in a condominium must be certified in areas where the land titles system is not available.
- 1959: The Boundaries Act was passed. Confirmation of boundaries under this Act, in effect, establishes a new root of survey information. The position of a boundary retraced and confirmed under this Act is deemed to be true and unalterable. All survey evidence contrary to the conformed position can be removed. Confirmation under this Act is not compulsory.
- 1964: The Registry Act was amended to allow the registrar to compile and register plans with numbered lots wherever property identification had become difficult under the older township lot framework. New abstract index books are opened

and the records entered under each numbered lot. A second development began that year. A code of standards for surveys and plans was added as a regulation under The Registry Act. The code provided the basic authority for demanding more complete survey information.

- 1968: The Province assumed complete responsibility for operation of all land registry offices. Prior to 1968, the counties had provided all offices and equipment except in the Toronto area and the North. This resulted in a tradition of local autonomy which accounts to a large extent for present variations in methods of operation. Increased revenue generated by business growth was used to hire staff to accommodate the additional workload. This policy has not been maintained by the Province and many offices currently suffer from a shortage of staff caused by Provincial manpower and fiscal constraints.
- 1973: Amendments requiring reference plans of survey for all new land divisions came into effect. The registrar can also require a reference plan when the quality of an existing metes and bounds description is poor.
- 1974: Legislation came into effect making it compulsory to register new subdivision plans in the land titles system in areas where it is available. This had the effect of increasing the flow of properties into the land titles system.

2. The Land Titles System

Ontario's first Land Titles Act was passed in 1885. The Ontario Act is based on the English legislation adopted in 1875. Generally, Ontario's Act suffers from two major deficiencies. These are:

- It does not sufficiently take into account the difference between English and Canadian conditions. The English system depends on the existence of permanent physical boundaries. The Torrens system (the land titles type system first introduced in Australia) includes the concept of boundaries fixed on the ground by survey monumentation. The Ontario adaptation did not provide for either alternative.
- The language of the Act has not been modernized and clarified to the same extent as has been done with The Registry Act. This is even more true of some of the regulations under the Act.

Most parcels of land in the Province are governed by the registry system. Settlement in Northern Ontario took place largely after 1887, and the use of the land titles system was compulsory. Thus, most of its area is governed by that system. The land titles system has been gradually extended to cover much of Southern Ontario including most major urban areas and growth centres.

Significant developments in the land titles system were:

- 1958: The Land Titles Act was amended to provide for an Examiner of Surveys and the regulation prescribing a code of standards for surveys, plans and descriptions in the land titles system came into effect. This was the beginning of the quality control program currently administered by the Land Boundaries Program.
- 1974: Legislation came into effect to provide that land included in a subdivision plan must be registered under The Land Titles Act if it is available in that area. This form of compulsory registration accounts for the majority of applications for conversion to the land titles system. This amendment complemented a related amendment to The Registry Act previously discussed.

3. A Comparison of the Two Systems

- Availability

Theoretically, the registry system is available throughout the Province. There is at least one office serving every county, district and regional municipality. However, approximately 70% of the registrations in the North take place in the land titles system. The land titles system is unavailable in many counties in Southern Ontario.

- Recordkeeping

The registry system maintains records on a geographic basis. Separate records are kept for each township lot and subdivision lot. However, separate records are not set up to record the further break-ups of large geographic areas such as township lots. As a large lot is severed into smaller pieces, numerous new entries are added to the single record. This makes title searching a gradually more difficult process. Attempts to remedy this situation with a variety of index type plans have been limited by lack of skilled staff and by financial constraints.

The land titles system partially solves this by indexing land on the basis of ownership. New parcel records are set up whenever divisions of ownership take place. The parcel number is simply a recordkeeping device. It need not have any geographical significance. In most offices, parcel numbers are assigned on a consecutive basis. However, parcel numbers of lots on plans of subdivisions may have a geographic significance. The general lack of geographical identifiers causes difficulty when searching. This is accentuated when trying to identify adjacent parcels in the system. The fundamental recordkeeping methods in the two systems are essentially different in some respects. The land titles system records ownership. Therefore, easements are included in the parcel records for the dominant land and excluded from the parcel records for the servient land.

- Significance of the Record

The registry system abstract index is simply a record of all registered and deposited documents. It is a guide to locating the documents. The documents themselves must be examined to determine their legal effectiveness and the state of the title. In contrast, the land titles parcel register is the title. Actually, the parcel register gives only the most important terms of most documents. It is, therefore, the usual practice of lawyers to examine all documents that have not been superseded.

- Currency of the Record

The registry system provides only an historical record of dealings with the land. No attempt is made to rule on the validity of documents and plans that appear to supersede others. As a result, prior documents and plans cannot be ignored. In the land titles system, the legal effect of a dealing is confirmed when an entry is made. Superseded entries are deleted. The register always reflects only current ownership and encumbrances. It is sometimes necessary in both systems to search back to the original crown grant for survey information.

The need to examine documents to satisfy oneself that they are no longer effective is one of the major disadvantages of the registry system. This inconvenience has been reduced in two principal ways:

- the forty-year search limitation period established in Part III of The Registry Act; and

- the barring of certain claims against land after a discharge has been registered for a given number of years.

- Compensation

Claims against the government for compensation are possible under either system. In the registry system, claims can be made under The Proceedings Against the Crown Act. Compensation would be paid for errors that would cause a searcher not to examine a document on the wrong land. Since the system is primarily responsible for accurate recording there are few other errors for which compensation would be paid.

The Land Titles Assurance Fund is available for compensation under the land titles system. The Fund provides a more comprehensive basis of compensation; for example, fraud is included. However, it has a number of serious shortcomings:

- the party who suffers loss has to proceed against any person responsible for the loss;
- a claim must be made within six years after an error is made; and
- the Fund is fixed at approximately one million dollars.

- Conclusiveness of the Register

Both land registration systems are deficient because many claims affecting the title to land do not appear on the title record. There are many Acts that impose obscure, unrecorded interests that affect title but are not recorded in either system.

However, the land titles systems does assist searchers in some ways:

- a separate search of executions in the sheriff's office is not required and only current owners need be searched;
- an indication that there is no unpaid corporations tax is sometimes included on the parcel register; and
- consents under or affidavits of compliance with The Planning Act are required.

Unfortunately, a statement regarding corporations tax or a Planning Act affidavits is not conclusive.

- Types of Documents Accepted

In the registry system, most documents affecting land will be accepted for registration if they comply with certain statutory formalities. These relate primarily to affidavits and the form of execution. In the land titles system the important documents are prescribed as to form. In both systems various types of survey plans are allowed. The general size and content are governed by the legislation and regulations.

- Effect of Registration

The act of registration has one common effect under both systems. Priority of registration prevails.

Under the registry system, documents are effective on delivery even without registration. The incentive to register is that an unregistered document may become ineffective as a result of a subsequent registration. The government's only responsibility is accurate recording. The lawyer is responsible for determining that there is a proper chain of title and that all the documents do what they purport to do.

In the land titles system registration is even more essential than in the registry system. Since the owner of an interest is the person shown on the parcel register, an unregistered document is, in theory, ineffective. Also, unlike the registry system, having notice of a prior unregistered document is not enough to defeat priority.

There is one important distinction between the systems. In the registry system a document is deemed to be registered when it is accepted by the land registrar and the proper registration fees are paid. In the land titles system, registration takes place when the entry in the parcel register is signed, although its effect is retroactive to the time the document was accepted. The effect of plan registration is the same in both systems. Plans which create new land divisions result in new abstract index or parcel register pages for those parcels. All other plans are simply recorded and are referenced for various purposes. The most common reference is for the description of ownership units.

4. A Summary of the Two Systems

The registry system is simpler from a user's point of view. The search process may, at times, be difficult but the registration process is efficient and straightforward.

Land titles system searches are generally uncomplicated. However, registration may be a lengthy and frustrating process. Users may face long delays in large offices during peak periods.

Registry system registration requirements are less stringent and are well understood. In the land titles system, registration requirements are more complex. Often, the acceptability of a document presented for registration is at the discretion of the land registrar. This creates an air of uncertainty and can lead to conflicts between system users and office staff.

These basic differences in the two land registration systems are significant. They must be recognized. They must be considered in the analysis and selection of land registration system improvements.

C. A SUMMARY OF PRIOR WORK

The discussion and proposals in the Ontario Law Reform Commission Report were, by necessity, somewhat general. The preparation of detailed recommendations and an implementation plan was left for the organization immediately responsible for land registration. In order to prepare an adequate response to the Commission's recommendations, many questions had to be resolved.

Under the direction of the Ministry of Consumer and Commercial Relations' Land Registration Management Committee, detailed analysis of the Province's land registration needs began in 1972. Legal, survey and systems project teams were set up and a number of studies were completed.

This report draws heavily on the experience and insight gained from these prior studies. A brief overview of this prior work follows.

1. Literature Search

Land registration systems are undergoing change world-wide. One of the first projects was to assemble and catalogue an inventory of the available land registration information.

This study had two major benefits:

- it accumulated documentation of current land registration practices; and
- it identified other jurisdictions which had systems of some interest to the Province.

2. Ontario Map Base Resource Inventory

A major component of land registration systems are the maps (or graphic indexes) used to describe the location and physical extent of properties. Many mapping agencies exist in the Province. This project resulted in a directory and catalogue of all agencies with an interest in mapping, particularly property mapping. It also included an analysis of the value of assessment mapping for future land registration improvements.

It is expected that a more efficient mapping process and a reduction in duplicated effort may evolve from this project.

3. Survey of Other Jurisdictions

The literature search identified jurisdictions throughout the world with land registration systems of some interest to the Province. A follow-up letter and a detailed questionnaire were sent to 117 jurisdictions. Responses to all questionnaires were analyzed. This determined the systems and jurisdictions of most interest to the Province.

Further correspondence and discussion resulted in a list of jurisdictions warranting personal visits.

4. In-Person Visits and Conferences

Project team members visited the following jurisdictions and agencies:

- County Clerk's Office, Nassau County, New York;
- Los Angeles County Registrar, Los Angeles County, California;
- Land Registration and Information Service, Council of Maritime Premiers, Fredericton, N.B., Charlottetown, P.E.I. and Halifax, N.S.;
- National Research Council, Ottawa, Ontario;
- Forsyth County, North Carolina;

- Uppsala County, Sweden; and
- Hamburg, Hanover, Essen, Krefeld, Dusseldorf and Mainz, West Germany.

Staff from other jurisdictions also visited the project team. Discussions were held with representatives from the following:

- England;
- South Africa; and
- Australia.

Project members participated in several national and international conferences relating to land registration systems. This promoted the sharing of information with other experts on an international level. It also developed a liaison with many agencies working towards solving similar problems.

Among the conferences attended were:

- Concepts of a Modern Cadastre Conference, Ottawa, October 1974;
- The Modernization of Land Data Systems Conference, Washington, D.C., April 1975;
- Users Conference on Provincial Coordinates, Edmonton, Alberta, May 1975;
- The International Symposium on Computer-Assisted Cartography, Reston, Virginia, September 1975;
- The FIRST Workshop, Winston-Salem, North Carolina, March 1976;
- The Canadian Institute of Surveying Conference, Winnipeg, Manitoba, May 1976; and
- The American Congress of Surveying and Mapping Conference, Washington, D.C., February 1977.

5. Preparation of Other Reports

As work progressed, other reports were tabled for the L.R.M.C. Each report provided the detailed information necessary for analysis of one aspect of land registration system reform. A brief review of these reports and their content follows:

(a) Registrar's Compiled Plans

This report evaluated various formats for Registrar's Compiled Plans to determine their usefulness in conversion from a registry system to a land titles system. It also resulted in a new procedural guide for Registrar's Compiled Plan preparation.

(b) Conversion Using Existing Map Base

This report evaluated the effectiveness of the plans already in the registry system as a tool in conversion from the registry system to the land titles system.

(c) Land Index and Display Sub-system (LIDS)

This report outlined a design for a mapping and land identification system. Recommendations dealt with quality control, property mapping, parcel identification, a survey register, a boundary register and information distribution. The total mapping and land indexing requirements of the Province were considered.

(d) POLARIS Chapter on Legal Issues

This report defined the legal concepts and legislative changes required for a modernized land registration system in the Province.

(e) Draft POLARIS Concepts Report

This preliminary report combined the work of the survey, legal and systems project teams in a series of design concepts and recommendations to the L.R.M.C. Much of its content serves as the foundation for this report.

6. The Results of Prior Work

These studies provided much of the information necessary to prepare detailed recommendations and an implementation plan. The experience of other jurisdictions helped identify the options available. Benefits and pitfalls were assessed using the practical experience of others.

Much of the material required for a well-reasoned response to the Ontario Law Reform Commission recommendations was now available. One major task remained. An in-depth analysis of the land registration system existing in Ontario was required.

III

THE CURRENT SITUATION

A. INTRODUCTION

Changes to the arrangements for land registration must be based upon a sound understanding of the current situation. Therefore, the first major activity of the study was the in-depth analysis of all land registration functions.

Three major functional areas were identified:

- the legal land registry offices;
- the head office; and
- the user community.

Analysis of land registry office functions included both:

- activities under the land titles system; and
- activities under the registry system.

Head office activities were analyzed in detail for:

- Branch I and Branch II head office functions;
- the Property Law Program; and
- the Land Boundaries Program.

The primary users of the land registration system were considered. These include:

- the general public;
- the legal profession;
- the survey profession; and
- the bulk users.

The study working papers (Volume III) provide details of the current situation. The more important findings are discussed in the sections following.

B. THE LAND REGISTRY OFFICE

1. Introduction

The Ministry of Consumer and Commercial Relations operates 65 land registry offices where land records are maintained. A land registry office has three main functions:

- registering documents and plans;
- storing and maintaining documents and plans; and
- making the information contained in documents and plans available upon request.

The land registry offices operate two systems of land registration:

- the registry system, which is essentially a system for recording documents and plans related to ownership of land and interests in land; and
- the land titles system, which registers title to land.

A recent analysis indicated that about 70% of Ontario's 3,100,000 parcels of land are registered under the registry system, with the remaining 30% registered under the land titles system. The proportion of parcels in the land titles system has been rising slowly but perceptibly in recent years. Of the 65 land registry offices in Ontario, 29 operate strictly under the registry system, 2 operate strictly under the land titles system, and the remaining 34 offices operate under both systems.

For the purpose of analysis and discussion, land registry office activities may be categorized under three headings:

- Those that are common to both the registry system and the land titles system. The main activities included in this category are:
 - title searching;
 - maintaining records;
 - microfilming documents;
 - providing photocopies; and
 - preparing reports.

- Those that are related solely to the registry system. The following activities are unique to the registry system, or procedures are different from those under the land titles system:
 - registering documents;
 - registering plans;
 - abstracting documents and plans;
 - preparing registrar's abstracts; and
 - preparing Registrar's Compiled Plans.
- Those that are related solely to the land titles system. The following activities are unique to the land titles system, or procedures are different from those under the registry system:
 - registering documents;
 - registering plans;
 - abstracting documents and plans;
 - maintaining writs of execution;
 - processing First Applications; and
 - conducting hearings.

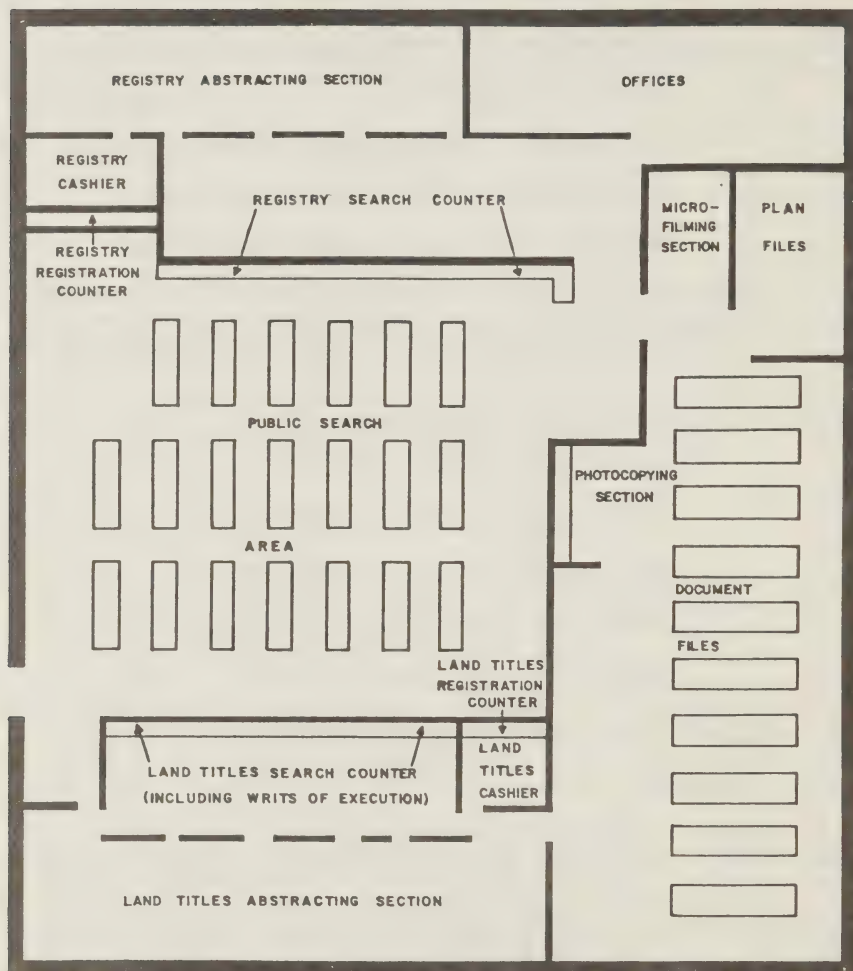
2. Activities Common to Both Systems

2.1 General

Before discussing common activities in detail, it is useful to briefly examine the land registry office as a whole. Figure 12, page 41, illustrates a layout of an office operating under both the registry system and the land titles system. The major functional components vary from office to office, but generally include the following:

- a registration counter, where documents and plans are examined and accepted for registration;
- a search counter, where title searchers obtain abstract index books, parcel registers, documents and plans;
- one or more cashiers, where payment for registrations, searches and other services is tendered;

FIGURE J2—FLOOR PLAN FOR A LAND REGISTRY OFFICE



- a public search area, containing a number of search tables, where searchers can examine abstract index books, parcel registers, documents and plans;
- a document filing section, where documents are stored;
- a plan filing section, where plans are stored;
- a photocopying section;
- an abstracting section, where office staff enter registered documents and plans into the abstract index books or parcel registers;
- a microfilming section, where registered documents are microfilmed for security and backup purposes; and
- an executions section, in offices operating under the land titles system, where staff searches of writs of execution are done.

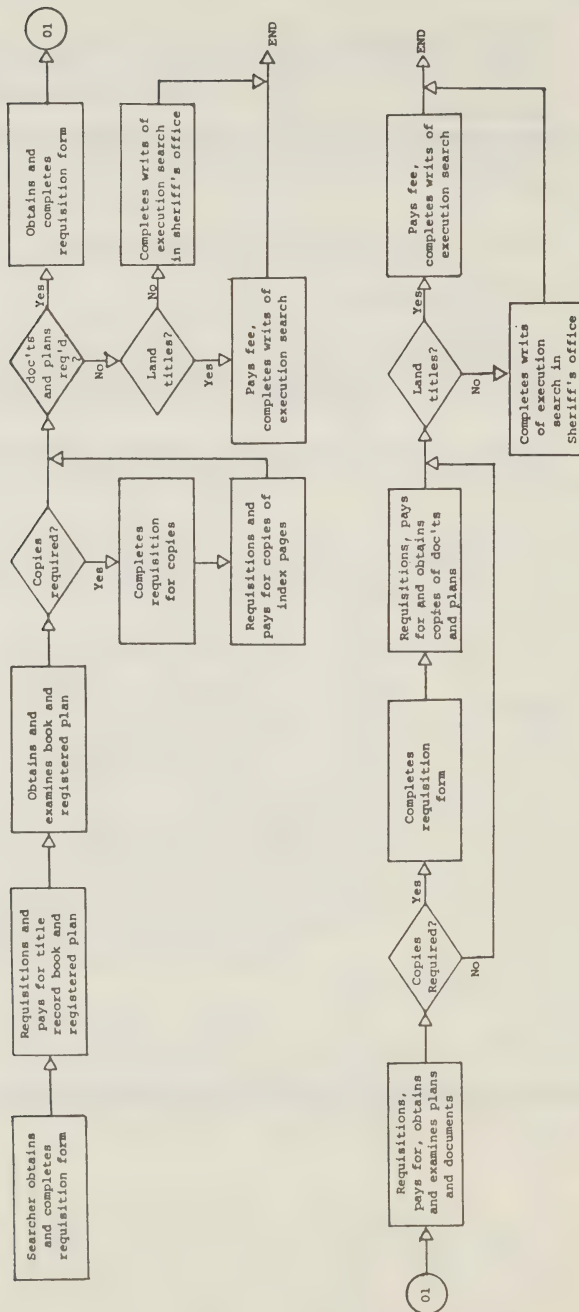
Land registry office activities are mostly clerical and at a low level of mechanization. Standard office equipment such as typewriters, photocopiers and cash registers are used. Computer related equipment and automatic processes are not. There is considerable variation in procedure among offices. Larger offices usually have more specialization of functions than smaller ones. Office activities are heavily dependent on paper records and ledger books and are almost totally manual with respect to filing and retrieval methods. Microfilm records are used but, except in the Toronto and York South office, only as security back-up to the paper system.

2.2 Title Searching

A title search in a land registry office (see Figure 13, page 43) is initiated by the searcher completing a requisition form specifying the abstract index book or parcel register he wishes to examine. The searcher then presents the completed form to the search counter.

There are many property records contained in each book. Another searcher may, therefore, be using the same book, or a staff member may be using the book for abstracting or photocopying. This problem is particularly severe in the registry system, because it is usually necessary for a searcher to look through more than one abstract index book and each book is in use longer.

FLOWCHART OF SEARCHING PROCEDURES



As mentioned previously, abstract index books in the registry system are set up on a geographic basis. A separate page or set of pages is used for each township lot, subdivision lot and condominium unit. When a document is registered against a particular lot, it is recorded (abstracted) on the appropriate page. If a lot is divided into many ownership units, all registered documents relating to each unit appear on one page or series of pages. Searching becomes difficult in this case, because it is difficult to separate documents relating to one unit from those relating to other recorded on the same page. This is not a problem in the land titles system, since separate pages in the parcel register are set up for each ownership unit ("parcel").

The abstract indexes in the registry system were formerly kept in bound books. As pages became filled, abstract entries were continued elsewhere in the same book or in a new book. The complete ownership history of a parcel could therefore form a series of entries extending through several books. Searching is difficult because of the need to obtain and examine many books. This is normally not a problem in the land titles system, since complete title information is usually contained in a single parcel register.

After the searcher has examined the appropriate abstract index book or parcel register, he obtains and examines specific documents and copies of plans. The searcher may want to obtain photocopies of some or all of the documents examined. He may want to have some photocopies certified. The number of documents that are requested in the average search in the land titles system is considerably less than in the registry system. A recent analysis indicated that the average figures were 4 and 20 respectively.

When the search is completed, the documents and plans are returned to the search counter and subsequently refiled by the staff. Most land registry offices have some sort of document security and control system to safeguard against loss and theft. The most common procedure is to retain a copy of the requisition form at the search counter. When the searcher returns the documents, they are checked off against the retained copy of the requisition form.

Since the documents are filed in registration number sequence, many documents relating to the same parcel of land must usually be retrieved from (and subsequently refiled in) different locations in the document files. In a large office, where the document files can occupy a large area in terms of floor space, document filing and retrieving is a time-consuming process. Until documents are returned to their proper filing locations, they are unavailable to other searchers.

The precise method and sequence of payment of search fees varies from office to office. In some offices, payment is received before abstract index books, parcel registers, or documents are given out. In other offices, fees are paid after services are performed. Moreover, in some offices fees charged for photocopies are handled separately from those charged for books and documents.

If the searcher in question represents a provincial government Ministry, no cash payment is made. Instead, the value of the services performed is recorded on a special form, along with the searcher's name and account number.

2.3 Maintaining Records

The major component of the files of a land registry office is legal documents such as deeds, mortgages, liens and wills. These are typically stored in multi-drawer filing cabinets. Some offices utilize motorized "Lek-triever" units. In the Toronto and York South office, the paper document filing system has been almost completely replaced by a jacketted microfilm system.

The history of ownership and current status of title to land parcels are recorded in large ledgers in each land registry office. These ledgers are called abstract index books in the registry system and parcel registers in the land titles system. Other indexes are maintained for special classes of instruments, most of which do not refer to specific parcels (for example, wills, municipal by-laws and powers of attorney). Typical pages of an abstract index and parcel register are illustrated in Figure 14 and Figure 15, pages 46 and 47.

Each office maintains a fee and receiving book in which registered documents and plans as well as fees and tax, are chronologically recorded. Figure 16, page 48, illustrates a typical page from a fee and receiving book. Offices that operate under both the registry system and the land titles system maintain separate fee and receiving books for each system.

A number of types of plans are registered and stored in land registry offices. Original linens are kept in "GABS" and other special filing cabinets; white prints are stored separately. Duplicates of subdivision plans are mounted on cardboard. There are currently over 34,000,000 paper documents stored in the land registry offices. Over 1,000,000 documents are registered each year, and this number is increasing about 5% annually. Although a large number of expired documents are removed from the files each year, it is not surprising that many offices

SAMPLE ABSTRACT INDEX PAGE

SHEET NO. 6

CONCESSION 3

LOT 5

REGISTRATION NUMBER	INSTRUMENT	DATE OF INSTRUMENT	REGISTRATION DATE	GRANTOR	GRANTEE	CONSIDERATION ETC.	REMARKS
48810	Mortgage not rec. in full	6 Oct. 1952	9 Oct. 1952	Robin Husband & Eleanor, husband & wife as Joint Tenants	The Seaton Insurance Company	\$8,000	Land in 3332
48920	Consent Re Building Restrictions	1 Oct. 1952	21 Oct. 1952	Lac Hine Realty Company Limited	I. C. Smoke	premise	W. of Lot Company consents that building erected thereon may remain in present position
48990	Discharge of Mort.	22 Oct. 1952	2 Nov. 1952	The Seaton Insurance Company	I. C. Smoke		Mort. 44402
51005	Grant	23 Oct. 1952	8 Nov. 1952	Sika S. Whyte & Priscilla Collico Whyte his wife as Joint Tenants	Sootie J. Black Assurance (Calcutta) Limited	\$2 etc.	E. 125 ft. of Lot With and Subject to Right of way
51065	Discharge of Mort.	13 Nov. 1952	19 Nov. 1952	The Building Society	At friends and Beatrice Brame		Mort. 55547
60012	Mortgage not rec. in full	12 May 1953	18 May 1953	Charles Father & Komplain his wife	Iva Rich & Iva Rich his wife upon Joint Account	\$11,500	Land in 20810 Discharged by 63567
60198	Grant	8 Apr. 1953	18 May 1953	Ian Rich & Iva Rich his wife as Joint Tenants	Charles Father & Komplain his wife	\$1 etc.	Land in 20810 With and Subject to Right of way
61112	Mortgage not rec. in full	14 Apr. 1954	27 Apr. 1954	Edna May Winn	Samuel Bird & his wife Jeannie Bird his wife as Joint Tenants	\$11,500	Land in 41474
61180	Grant	14 Apr. 1954	27 Apr. 1954	Samuel Bird & his wife Jeannie Bird as Joint Tenants	Edna May Winn	\$16,700	W. 1/2 of P. 1/2 of Lot. Subject to Vendor's Lien for \$11,500.

PARCEL REGISTER

ORIGINALY: 751
Township of York
RECENTLY:
Section 1, Toronto

ESTATE: FEE SIMPLE
SUBJECT TO: THE RESERVATIONS, LIMITATIONS, PROVISIONS AND CONDITIONS EXPRESSED IN THE GRANT FROM THE CROWN, AS VARY BY STATUTE,
THE OVERRIDING PROVISIONS OF THE LAND TITLES ACT AND OF ANY OTHER ACT, AND THE ENCUMBRANCES RECORDED BELOW.

TITLE: ABSOLUTE
PARCEL 1179-1
SECTION M-107

PAGE 1

SUBJECT TO SUBSEQUENT ENTRIES THIS PARCEL IS COMPRISED OF THE FOLLOWING LAND

Under Re-entry and Transfer 424982
John C. Kompost of the City of Toronto, and
Ena S.A. Kompost his wife, as joint tenants, are the owners
in.

Fee simple with an Absolute Title of:
Lot 1178 and that part of Lot 1179 on the south side of Barnward Avenue as shown on Plan M-107 (City of Toronto) registered in the Office of Land Titles
at Toronto, described as follows: COMMENCING at the northeast angle of said Lot 1179; THENCE WESTERLY along the northerly limits of said Lots, 51 feet
11 inches more or less to a point in the north limit of said Lot 1178, where it is intersected by the production northerly of the centre line of party
wall between the house on this land and that to the west thereof; THENCE SOUTHERLY along the said production and the said centre line of wall and its
production southerly in all 120 feet more or less to the south limit of said Lot 1178; THENCE EASTERLY along the southerly limits of said Lots, 51 feet
11 inches more or less to the southeast angle of said Lot 1179; THENCE NORTHERLY along the easterly limit of said Lot 1179, 120 feet more or less to
the place of beginning.

The title of the said owners is subject to:
1. The exceptions and qualifications in the Land Titles Act.
Dated at Toronto 23rd March, 1970.

Outstanding Land Certificate

Authorized Signing Officer.

REGISTRATION NUMBER	INSTRUMENT	DATE OF INSTRUMENT	REGISTRATION DATE	GRANTOR	GRANTEE (APPLICANT, CAUTIONER, CLAIMANT, ETC.)	CONSIDERATION ETC.	LAND - REMARKS - SIGNATURE
B-44033	Transfer	15/6/73	15/6/73	Owners	George A. Kompost, Requisite and MARILYN JANE his wife both of Toronto as joint tenants		A.S.O. Stone.
B-44376	Charge		15/6/72	Owners	SHING MORTGAGE CORPORATION	\$20,000	Cess. B-44958 Reg. 27/6/75 A.S.O.
B-44958	CHARGE		15/6/72	Owners	ROBIN LIONEL WHITE and ELEANOR RUTH WHITE, his wife, both of Toronto on joint account with rights of survivorship	\$8,500	Cess. B-44958 Reg. 27/6/75
B-44959	Transfer		27/6/75	Owners	ALEC THOMAS and MARGARET LESLIE THOMAS, his wife, both of Toronto, as joint tenants		A.S.O. <i>[Signature]</i>
B-44960	Charge		27/6/75	Owners	THE SLICK BANK OF CANADA	\$25,000	
B-44099	Charge		27/6/75	Owners	SIGA (TORONTO) CREDIT UNION LIMITED	\$21,000	A.S.O. <i>[Signature]</i> A.S.O. <i>[Signature]</i>

FIGURE 16

FEE AND RECEIVING BOOK - REGISTRY OFFICE

LAST REGISTRATION NUMBER 293369
ON THIS PAGE

PAGE 578

DATE Tuesday, May 9, 1978

NUMBER	INSTRUMENT	MORTGAGE LIB. 12 NUMBER 1	LOT	PLAN	CON	MUNICI- PALITY	FEES	LAND TRANSFER TAX			RETAIL SALES TAX			CASH PAID BY REGISTERED PARTY	DUPLICATE INSTRUMENT
								CONTRIBUTION TO THE TAX	TAX	SALES TAX	SALES TAX	SALES TAX	SALES TAX		
CT. NO.			BROUGHT FORWARD 160				1,292.00	22,500	67.50	111,054	1,836.03			BOX NO.	
293330	DM		5	356			5.00							M. J. Barreca 412 2d Broom	
293331	Agree. Post. Mtg.		29	1116			10.00							147	
293332	Grant		5	1387			10.00			74,850	344.10	150	6.00	98038752	
293333	Mtg.		5	1387			10.00							452	
293334	DM		561, to 563	557E			7.00							990	
293335	AM		36	384E			10.00							570	
293336	DM		Blk A	510			5.00							32	
293337	DM		20, 21	991			6.00							857	
293338	Grant		1, 2	1508			12.00		NT					857	
293339	DM		178	1301			5.00							606	
293340	Mtg.		2	58E			10.00							1042	
293341	DM		7, 13, 14	22A			7.00							1042	
293342	Cert. Dis. Ltr.		81	560			5.00							123	Have a good receipt
293343	Probate		MARGUERITE CHARLOTTE GAGLIARDINI				10.00							570	
293344	Certificate		193	1788			5.00							ND	
293345	Agreement		11, 12	248			12.00							ND	
293346	Mtg.		82	188			10.00							ND	
293347	Grant		82	188			10.00							ND	
293348	Deposit		82	188			5.00							ND	
293349	Mtg.		12, Blk A	418			10.00			42,000	147.00			144	
293350	Mtg.		12, Blk A	418			10.00							144	
293351	DM		12, Blk A	418			5.00							913	
293352	Mtg.		5 to 9	622			18.00							913	
293353	DM		Blk Y	622			7.00							84	
293354	Cert. Dis.		5 to 7	622			5.00							88	
			56	798			5.00							ND	
CARRIED FORWARD 200							1,501.00	22,500	67.50	527,854	2,327.13	--	150	6.00	

The Toronto and York South office is the only office where, except for the most recent documents, microfilm is used for searching purposes. Microfilm jackets are made from the film and stored in a special-purpose filing cabinet close to a number of jacket film viewers. A reader-printer is available to make paper copies on request.

2.5 Providing Photocopies

Photocopies of documents, abstract index pages and parcel register pages are provided for a fee on request. Photocopies may or may not be certified. If a certified photocopy is requested, a certificate is completed, indicating the document registration number and including an official seal and signature. Some land registry offices utilize a rubber stamp in lieu of a separate certification document.

2.6 Preparing Reports

All land registry offices are required to prepare a number of reports. Most of these are submitted to Branch I and Branch II head offices; the rest are forwarded to other government Ministries. Reports are generated on a daily, weekly, monthly, quarterly and annual basis. All are prepared from manual records and files maintained by each office. In some cases, the existence of a file can be attributed solely to its use as a source of information required for some report. A summary of the various reports follows:

- a Daily Reconciliation Sheet, which is used to facilitate the cash balancing and reconciliation process, is prepared daily. Although the format of this intra-office report varies slightly from office to office, the contents are the same;
- a Weekly Activity Report, forwarded to the regional supervisor, contains information regarding registration activity and the backlog of work in progress;
- an Interim Statement of Fees and Tax, forwarded weekly to the Financial Management Branch, provides a daily summary of bank deposits, fees, land transfer tax and retail sales tax;
- a Monthly Return, forwarded to Branch I and Branch II head offices, contains information regarding registration activity, fees and tax, and backlogs in office workload;

are experiencing severe storage problems. The continuing need for more filing space results in a need for ever larger accommodation and consequently ever increasing operating costs. The growing volume of the files also adversely affects operational efficiency and the level of service. The time required for filing and retrieval increases continually. Where office size is not expanded, the staff or public area, or both, become increasingly cramped.

2.4 Microfilming Documents

Every registered document is microfilmed for security and back-up storage before it is filed. A document registered in the registry system may be microfilmed before or after it is abstracted, depending upon office policy. A document registered in the land titles system is always microfilmed after it has been abstracted in the parcel register.

Microfilm frames are identified by the document registration number stamped on the first and last page of the document. In addition, the number of pages contained in the document is written on the first page. Documents are microfilmed in registration number sequence. The starting and ending registration numbers are written on each microfilm roll container. Each roll can accommodate approximately 400 documents - nearly the number of documents that can be stored in a single filing cabinet drawer.

Each land registry office forwards completed rolls of film to the Hamilton office where they are processed and the required copies produced. One copy of the microfilm is returned to the land registry office, where it is filed for ready access in case of a missing paper document. The original is sent to the records centre in Mississauga for back-up storage, and another copy is made for the Ministry of Revenue, Assessment Division.

Each office is equipped with at least one microfilm camera and film reader. If paper copies of a document on microfilm are required, they must be made in Hamilton, usually from the roll stored in Mississauga. This makes it unnecessary for individual offices to have reader-printers. The microfilm rolls kept in the land registry offices are used only when original documents cannot be located in the files. Paper documents are used for title searching purposes, except in the Toronto and York South office.

- a Condominium Control Sheet, forwarded monthly to the Property Law Program, contains information on the number and type of condominium units registered;
- Services Supplied to Ontario Government Offices, Copies of Documents and Plans Supplied to Ministry of Revenue, and Copies of Documents and Plans Supplied to Ministry of Transportation and Communication. These three reports provide details of services provided to other government ministries, and are forwarded monthly to Branch I and Branch II head offices;
- a Quarterly Return, forwarded to Branch I and Branch II head offices, provides information on registration activity and related fees. The second quarter return also provides an inventory of office equipment and notes any surplus items not required in the office. The Quarterly Return is very similar in content to the Monthly Return. It was introduced to facilitate the compilation of fiscal year data; and
- the Annual Return, also forwarded to Branch I and Branch II head offices, is almost identical in format and content to the Quarterly Return. It is prepared directly from the Quarterly Returns.

During the course of document registration, there are often additional forms that must be processed. There are three cases where this applies:

- Land Speculation Tax Lien Clearance Report
A Land Speculation Tax Lien Clearance Certificate issued by the Ministry of Revenue signifies compliance with The Land Speculation Tax Act. This certificate is attached to the document. The certificate number, together with the document registration number and the office name and number, are entered on the Land Speculation Tax Lien Clearance Report. This report is submitted monthly to the Ministry of Revenue;
- Chattels Exemption Certificates
A Chattels Exemption Certificate, issued by the Ministry of Revenue under The Retail Sales Tax Act, is attached to the document. The document registration number, as well as the name and number of the land registry office, are added to the certificate. Chattels Exemption Certificates are accumulated and submitted monthly to the Ministry of Revenue; and

- Land Transfer Tax Undertaking Form

A Land Transfer Tax Undertaking Form is attached to the document. The document registration number is added to the form, together with the signature and seal of the land registrar. The completed undertaking form, plus a copy of the document, is forwarded to the Ministry of Revenue after registration.

There is a great deal of duplication of information in the reports submitted to Branch I and Branch II head offices. In particular, the Monthly Return, Quarterly Return and Annual Return are almost identical in content and format. Land registrars complain of the time spent in repetitive and duplicate reporting. There is no question that some consolidation of reports is desirable. To accomplish this, a comprehensive management information system is being developed.

In most cases, a copy of the report is retained for audit purposes. Discussions with land registrars have revealed that most of these audit files are seldom, if ever, used by the Ministry's internal audit staff.

The preparation of reports for other government Ministries requires a significant number of man-hours each month and is another source of aggravation.

3. Activities: Registry System

3.1 Registering Documents

A document submitted for registration in the registry system is first examined by a registration clerk. The clerk:

- ensures that the document meets all statutory requirements as to form and execution, particularly those relating to required signature and affidavits;
- ensures that the legal description complies with the regulations;
- consults senior staff if there are complex registration problems;
- calculates fees, land transfer tax and retail sales tax, and notes the amounts on the document; and
- notes or stamps date and time of registration on the document.

The examination of documents submitted for registration is a complex process. Registration clerks must keep up with constant changes in legal requirements and operating procedures. They are faced with a large variety of documents. Detailed discussion of registration requirements with solicitors requires considerable skill, tact and experience.

The complexities of document examination coupled with a general shortage of suitably experienced clerks capable of performing this important function, has caused this to be the most time-consuming activity in the registration process.

During periods of peak registration volumes, offices may use casual help or, more likely, shift abstracting clerks to document examination to cope with the demand for service. One of the consequences, of course, is that the abstracting falls behind.

After the document has been examined and approved, fees and tax are collected. This activity presents little problem because it is mechanized. The cashier is, therefore, able to keep up with peak volumes quite easily. Fees and tax amounts are always recorded on the face of the document so that little judgement is required on the part of the cashier.

The original document and any duplicate copies are stamped with a registration number and a certificate of registration. Most offices utilize a self-incrementing stamping device that virtually eliminates the possibility of numbering errors.

After the document has been registered, the registration particulars are recorded in the fee and receiving book. When a page of the fee and receiving book is filled, it is photocopied. The photocopy is used for searching current entries. Because the entries are made manually, a backlog problem occasionally arises during peak periods.

The fee and receiving books is the reference point for those documents that have been registered but not yet abstracted. If abstracting is far behind, searching takes longer because:

- searches of the fee and receiving book are difficult; and
- unabstracted documents are difficult to locate.

After entry in the fee and receiving book, any duplicates are returned to the registrant. The original goes on to either microfilming or abstracting, depending upon office procedure.

3.2 Registering Plans

Plans are used extensively in the registry system to provide information on land parcel boundaries and interests such as easements. Plans also provide simple legal descriptions: it is much easier to refer to "Lot 25 on Registered Plan No. 6930" than to write many lines of "metes and and bounds" description.

Plans entering the registry system are subject to some or all of the following procedures:

- Examining plans: Survey plans are examined by land registry office plan examiners. A checklist type of examination for technical compliance with the survey requirements under The Registry Act is performed in most cases. Figure 17, page 52, illustrates the checklist that is used. Two or more paper prints of the plan are submitted to the plan examiner. Any required corrections are noted on the prints. One print is returned to the surveyor so that the original plan can be corrected before it is registered. On registration, the registration clerk ensures that all the required certificates have been completed and that the ownership and encumbrances shown are consistent with the title record.
- Numbering plans: All land registry offices maintain various plan index or log books. These are used to control the assignment of plan identification numbers. Separate and distinct numbering series are usually maintained for different types of plans.
- Recording in the fee and receiving book: A plan submitted for registration is recorded in the fee and receiving book.
- Creating new abstract index pages: When registered, certain plans - including subdivision plans, condominium plans and judge's plans - create new land divisions. New abstract index or condominium register pages are created to reflect these new land parcels.
- Abstracting: Significant information, including the plan number, type and registration data, is entered in the abstract index or condominium register.
- Filing: A separate file is maintained for each series of plans. Original linens are filed in special-purpose "GABS" cabinets; white prints are filed separately. Many special-purpose filing cabinets and other types of plan storage equipment are used.

SECTION OF A TYPICAL PLAN CHECKLIST

PLAN CHECK LIST

SURVEYS AND PLANS O.R.G. 780 OF R.R.O. 1970
(REGISTRY ACT)MINISTRY OF CONSUMER
AND COMMERCIAL RELATIONS
PROPERTY RIGHTS DIVISION

PLAN OF SUBDIVISION

PLAN NUMBER
REGISTRATION DATE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	Section	Lot Concession	Lot Block Reg. Plan	Municipality																																																																																																														
		Requirements as set out in Section 86 of The Registry Act.																																																																																																																
2	29 40(1) (2) 41, 42 44, 48	CERTIFICATES, AFFIDAVITS, etc. Form 1 Surveyor's certificate <input type="checkbox"/> Form 4 consent of mortgage <input type="checkbox"/> Form 7 Registration certificate <input type="checkbox"/> Form 2 Owner's certificate <input type="checkbox"/> Form 5 affidavit of witness <input type="checkbox"/> Form 8 statement of surveyor (plan document) <input type="checkbox"/> Form 3 affidavit of witness to owner's certificate <input type="checkbox"/> Form 6 affidavit as to age (owner and mortgagee) <input type="checkbox"/> *Form 7, Check if this form is also included on each part, where a plan consists of two or more parts.																																																																																																																
3	Sec. 78(9) Reg. Act	Approval under Section 33 of The Planning Act.																																																																																																																
4	39	SIZE OF PLAN - Not larger than 24" x 30", including 1" margin.																																																																																																																
5	43(2)	CORPORATE SEAL Corporate Owner Corporate Mortgagee																																																																																																																
6	17(1) (2) 18	SIGNATURES All signatures on the original plan or on the mechanical reproduction on plastic material in lieu thereof, must be original and executed in black India ink or black etching ink only and must also show the name of the person, legibly printed under each signature, and, if signed under a power of attorney must code power of attorney registration number.																																																																																																																
7	See memo dated Sept. 15 1970	An existing easement in favour of a Municipal Corporation or Municipality operated public utility under an unregistered document may be shown in the same manner as a registered document, together with the following notation: "THE EASEMENTS SHOWN REPRESENT EXECUTED AGREEMENTS IN FAVOUR OF AND DELIVERED TO THE CORPORATION OF THE TOWN OF..... AND/OR THE HYDRO-ELECTRIC COMMISSION OF THE TOWN OF..... FOR REGISTRATION SUBSEQUENT TO THE REGISTRATION OF THIS PLAN."																																																																																																																
8	5(1)(a) (g) (h)	TITLE BLOCK: Must include: 1) Township lots, registered plan lots, block, section mining claim, etc. 2) Concession, tract, range or other designation. 3) A block resulting from a subdivision for abstract purposes under Section 81 of the Registry Act or a predecessor of that section. 4) Parts of or all of streets, highways, road allowances, etc., that have been stopped up or closed, the by-law number and registration number of the by-law. 5) Name of geographic township, name of municipality, and of the county, district or regional municipality and former municipality if applicable. Also the scale of the plan and the year in which the survey was completed must be shown under the title block.																																																																																																																
9	45	ITEMS FOR REGISTRATION 1 original plan 1 mounted duplicate (24" x 36") on opaque white linen 1 unmounted duplicate (mylar or other plastic material) 2 paper prints																																																																																																																
PLAN AND SURVEY REQUIREMENTS																																																																																																																		
10	21(2)	NORTH POINT to be in a conspicuous position																																																																																																																
11	15 31(2) (3) (4)	NATURAL BOUNDARIES 1) The plan must show the position of a limit of a lot or parcel, which is a natural boundary including a water boundary, or the position of a limit of a lot or parcel, which is dependent upon a natural boundary. In the case of a water boundary, the plan must show a) The position of the highwater mark where the water boundary creates a new limit of a parcel. b) The position of the original highwater mark and present highwater mark where the original position of the water boundary has changed due to artificial flooding or reclamation. c) The position of the original highwater mark and present highwater mark where the original position of the water boundary has changed due to erosion and accretion, provided the position of the original highwater mark can be re-established precisely from previous survey records or physical evidence on the ground. 2) All natural boundaries must be determined by a) periodic offsets, b) atadia measurements, c) controlled photogrammetric methods. 3) All particulars to be shown on the plan. (sec. 31(2), in accordance with sec. 31(3) (4)).																																																																																																																
12	14(1) (2)	ERROR OF CLOSURE not to exceed 1 in 5000 except where the perimeter of a subdivision unit does not exceed <table border="1"> <thead> <tr> <th>Feet</th> <th>Error</th> <th>Feet</th> <th>Error</th> <th>Feet</th> <th>Error</th> <th>Feet</th> <th>Error</th> <th>Feet</th> <th>Error</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>0.10</td> <td>800</td> <td>0.24</td> <td>1500</td> <td>0.34</td> <td>2200</td> <td>0.44</td> <td>2800</td> <td>0.58</td> </tr> <tr> <td>200</td> <td>0.12</td> <td>900</td> <td>0.26</td> <td>1600</td> <td>0.35</td> <td>2300</td> <td>0.46</td> <td>3000</td> <td>0.60</td> </tr> <tr> <td>300</td> <td>0.14</td> <td>1000</td> <td>0.28</td> <td>1700</td> <td>0.36</td> <td>2400</td> <td>0.48</td> <td>3100</td> <td>0.62</td> </tr> <tr> <td>400</td> <td>0.16</td> <td>1100</td> <td>0.30</td> <td>1800</td> <td>0.37</td> <td>2500</td> <td>0.50</td> <td>3200</td> <td>0.64</td> </tr> <tr> <td>500</td> <td>0.18</td> <td>1200</td> <td>0.31</td> <td>1900</td> <td>0.38</td> <td>2600</td> <td>0.52</td> <td>3300</td> <td>0.66</td> </tr> <tr> <td>600</td> <td>0.20</td> <td>1300</td> <td>0.32</td> <td>2000</td> <td>0.40</td> <td>2700</td> <td>0.54</td> <td>3400</td> <td>0.68</td> </tr> <tr> <td>700</td> <td>0.22</td> <td>1400</td> <td>0.33</td> <td>2100</td> <td>0.42</td> <td>2800</td> <td>0.56</td> <td>3500</td> <td>0.70</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4200</td> <td>0.84</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4900</td> <td>0.98</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5000</td> <td>1.00</td> </tr> </tbody> </table>			Feet	Error	Feet	Error	Feet	Error	Feet	Error	Feet	Error	100	0.10	800	0.24	1500	0.34	2200	0.44	2800	0.58	200	0.12	900	0.26	1600	0.35	2300	0.46	3000	0.60	300	0.14	1000	0.28	1700	0.36	2400	0.48	3100	0.62	400	0.16	1100	0.30	1800	0.37	2500	0.50	3200	0.64	500	0.18	1200	0.31	1900	0.38	2600	0.52	3300	0.66	600	0.20	1300	0.32	2000	0.40	2700	0.54	3400	0.68	700	0.22	1400	0.33	2100	0.42	2800	0.56	3500	0.70									4200	0.84									4900	0.98									5000	1.00
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14	20	LINEAR MEASUREMENTS in feet and decimals of a foot or in feet and inches.																																																																																																																
15	21(1)	DIRECTIONS OF LINES quadrantal bearings only and preferably in the north-east and north-west quadrants.																																																																																																																
16	19	ENLARGEMENTS check the added information which made the enlargement necessary.																																																																																																																
17		KEY PLAN OR IDENTIFICATION PLAN: In the case where a key or identification plan is included in the plan, check if the land affected is outlined in an identifiable manner, together with the designation of lots affected and lots affecting the lands abutting.																																																																																																																

continued.....

- Distribution copies: Reproduceable copies of subdivision and condominium plans are distributed to the clerk of the local municipality, the Ministry of Revenue and the Ministry of Housing. Various local arrangements have been made to provide copies of other types of plans to interested agencies.

Approximately 15 types of plans enter the registry system. Figure 18, page 57, presents a general summary of the procedures that are followed in a typical land registry office under the registry system.

Numbering systems are not consistent from office to office, and plans registered in some offices have been converted from one system to another, then to a third. A great deal of time is wasted in these offices in locating the latest or correct plan number reference. Given an old plan number, it must be determined whether that plan has been converted to a newer numbering series.

3.3 Abstracting Documents and Plans

Entries in an abstract index book are generally made in longhand. In most offices, the index book and page number are written on the document. Abstract entries are generally verified by senior office staff. Proper abstracting is vital to the land registration system and requires considerable skill. Entries must be able to analyze the intent and content of the document or plan in order to abstract it properly. The entry must be concise, clear and meaningful. In the registry system, the Province is responsible for accurate recording. An incorrect entry may result in depriving someone of an interest in land and extensive financial liability to the government.

Because of the peak loads, lack of experienced staff and the inherently slow nature of the abstracting process, the abstract index books in a land registry office are sometimes difficult to keep current. Land registry offices experience extreme fluctuations in registration activity which cannot be controlled by the system. It is not feasible to staff for such peaks. In order to meet the demand for registration service during these periods, abstracting staff may be transferred to the registration and search counters. This further contributes to the backlog in abstracting.

The abstracting process is slow because:

- the right abstract index book and page must be located;

FIGURE 18

SUMMARY OF PLANS : REGISTRY SYSTEM

TYPE OF PLAN	EXAMINED BY:	RECORDED IN:	NUMBERING SERIES	RECORDED IN FEE AND RECEIVING BOOK ?	ABSTRACTED?	REMARKS
Subdivision Plan	Registry office plan examiner	Subdivision Plans Log Book	Subdivision Plans	yes	yes	Creates new index pages
Condominium Plan	Land Boundaries Program (Toronto)	Condominium Corp. Index	Condominium Plans	yes	yes	Creates new index pages
Registrar's Compiled Plan	Land Boundaries Program (Toronto)	Registrar's Compiled Plans Log	Registrar's Compiled Plans	yes	yes	Creates new index pages
Judge's Plan	Land Boundaries Program (Toronto)	Subdivision Plans Log Book	Subdivision Plans	yes	yes	Creates new index pages
Reference Plan	Registry office plan examiner	Reference Plans Log Book	Reference Plans	yes	yes	Deposited, not registered
Boundaries Act Plan	Land Boundaries Program (Toronto)	Boundaries Act Plans Log Book	document number	yes	yes	
Crown Plan	Registry office plan examiner	Miscellaneous Plans Log Book	Miscellaneous Plans	yes	yes	
Expropriation Plan	Registry office plan examiner	Miscellaneous Plans Log Book	Miscellaneous Plans	yes	yes	
Navigable Waters Plan	Registry office plan examiner	Miscellaneous Plans Log Book	Miscellaneous Plans	yes	yes	
Highway Plan	Ministry of Trans. and Communications	Highway Register	Highway Plans	yes	yes	
Canada Lands Plan	Registry office plan examiner	Canada Lands Register	Canada Lands Plans	yes	yes	
Official Plan	-	Official Plans Log Book	Official Plans	yes	no	Lodged, not registered
Cemetery Plan	-	Miscellaneous Plans Log Book	Miscellaneous Plans	yes	yes	Deposited not registered
Municipal Plan	-	Various	Various	yes	yes	

- there are many unusual documents that must be examined in detail to determine the proper abstract entry;
- metes and bounds descriptions are difficult to summarize;
- abstract entries are manual (typed or written);
- abstract index books are generally large and bulky, and are difficult to use; and
- the abstract index books may be in use by searchers.

3.4 Preparing Registrar's Abstracts

A registrar's abstract is, as the name implies, a title search certified by the land registrar. A request for a registrar's abstract can be received verbally or in writing. It includes:

- a description of the land for which the title search is to be performed;
- the start and end dates of the title search; and
- the classes of registered documents that are to be omitted.

A request for a registrar's abstract is initially entered in a log book. This log book provides an indication of the volume of work and the backlog that may exist at any point in time.

The main activity in the preparation of a registrar's abstract is the title search. The search involves examining the abstract index to identify all the documents included in the request. This requires considerable skill because documents relating to many different land parcels are often combined in a single record. The documents must then be examined and analyzed to ensure that they all do, in fact, affect the property for which the abstract has been requested. The completed abstract is typed on special sheets, signed and certified by the registrar or a deputy. The certification signifies only that the documents the abstract identifies are all the registered documents included in the request. It does not guarantee that the documents are valid or effective.

The preparation of registrar's abstracts is time consuming and requires skilled staff. Accordingly, the use of certified photocopies of the abstract index pages is now encouraged as a substitute.

3.5 Preparing Registrars' Compiled Plans

The preparation of a Registrar's Compiled Plan may be undertaken by:

- the land registrar; or
- jointly by the land registrar and the Land Boundaries Program.

All Registrar's Compiled Plans are unique in that they are generated from within the land registration system. They are primarily a housekeeping tool used to facilitate organization of the abstract index books on a land parcel basis and thus make title searching easier.

The land registrar determines the need for a Registrar's Compiled Plan by identifying an area for which the title records have deteriorated. A title search of the land in question is then performed. A draft copy (usually in pencil) of the plan is then prepared and submitted (in duplicate) to the Land Boundaries Program. Also submitted are copies of any supporting documents.

The draft plan is checked and completed by the Land Boundaries Program. During this activity there is usually extensive communication and interaction between the Land Boundaries Program and the land registry office. The completed plan is formally approved and returned to the land registry office.

Upon receipt of the completed plan, the land registry office staff first perform a subsearch to bring the title information on the plan up-to-date. The plan is then logged (or indexed), assigned a number from a sequential numbering series, and registered. An entry is made in the fee and receiving book and the certificate of registration is completed on all copies of the plan. A copy of the plan is sent to the Land Boundaries Program. Reproduceable copies are sent to the Ministry of Revenue and the clerk of the local municipality.

Finally, the plan is abstracted. New abstract index pages are prepared for the parcels shown on the plan, and forwarding entries are made on the previous abstract index pages.

4. Activities: Land Titles System

4.1 Registering Documents

A document submitted for registration in the land titles system is first examined by a registration clerk. The examination process is similar to that in the registry system, with the addition of the following:

- the relevant parcel register is examined to ensure that the registration will be effective; and
- in many cases, a search is made for writs of execution against the owner of the land in question.

In the Toronto and York South office and some other offices there is a formal registration pre-approval process that is used for unusually complex documents.

Once approved, the date, time of day and next sequential registration number are noted or machine-stamped on the document. The appropriate fees, land transfer tax and retail sales tax are calculated and likewise noted on the document. A pencil entry is made in the parcel register to signify that the document has been received and approved.

Fees and tax are then collected. The original document and any duplicate copies are stamped with a certificate of registration as in the registry system. A document entered into the land titles system is not considered to be officially registered until it is abstracted and the parcel entry and document are signed by an authorized staff member. The certificate of registration is thus left unsigned until after abstracting.

Then, as in the registry system, the document is recorded in the fee and receiving book. When a page of the book is filled, it is photocopied, and the photocopy is made available for subsearching.

The document is then abstracted.

4.2 Registering Plans

All plans of survey submitted for registration in the land titles system are examined by Land Boundaries Program plan examiners. The plans receive a type of examination referred to as submission analysis that can usually be completed within an hour. Certain types of plans receive an in-depth examination and the approval process takes longer. It takes longer still if the plan being examined is considered to be substandard.

Plans are numbered, recorded in the fee and receiving book, abstracted and filed as in the registry system. Distinctive numbering series are used to identify several types of plans in the land titles system.

Approximately 15 types of plans enter the land titles system. Figure 19, page 61, presents a general summary of the procedures that are followed for various types of plans.

FIGURE 19
SUMMARY OF PLANS : LAND TITLES SYSTEM

TYPE OF PLAN	EXAMINED BY:	RECORDED IN:	NUMBERING SERIES	RECORDED IN FEE AND RECEIVING BOOK ?	ABSTRACTED?	REMARKS
Subdivision Plan	Land Boundaries Program (regional)	Subdivision Plans Log Book	Subdivision Plans (M - Plans)	yes	yes	Creates new parcel registers
Condominium Plan	Land Boundaries Program (Toronto)	Condominium Corp. Index	Condominium Plans	yes	yes	Creates new parcel registers
Reference Plan for 1st Apps.	Land Boundaries Program (Toronto)	Reference Plans Log Book	Reference Plans (R - Plans)	yes	yes	
Combined Municipal Application Plan	Land Boundaries Program (Toronto)	Subdivision Plans Log Book	Subdivision Plans (M - Plans)	yes	yes	Creates new parcel registers
Reference Plan	Land Boundaries Program (regional)	Reference Plans Log Book	Reference Plans (R - Plans)	yes	yes	
Boundaries Act Plan	Land Boundaries Program (Toronto)	Boundaries Act Plans Log Book	document number	yes	yes	
Crown Plan	Land Boundaries Program (regional)	Miscellaneous Plans Log Book	Miscellaneous Plans	yes	only if title is affected	
Expropriation Plan	Land Boundaries Program (regional)	Miscellaneous Plans Log Book	Miscellaneous Plans	yes	yes	May create new parcel registers
Navigable Waters Plan	Land Boundaries Program (regional)	Miscellaneous Plans Log Book	Miscellaneous Plans	yes	only if title is affected	
Highway Plan	Ministry of Trans. and Communications	Highway Register	Highway Plans	yes	only if title is affected	
Canada Lands Plan	Land Boundaries Program (regional)	Canada Lands Register	Canada Lands Plans	yes	yes	
Trans-Canada Pipelines Plan	Land Boundaries Program (regional)	Trans-Canada Pipelines Rgstr.	Trans-Canada Pipelines Plans	yes	yes	
Ministry of Nat. Resources Plan	Ministry of Natural Resources	Miscellaneous Plan Log Book	Miscellaneous Plans	yes	yes	
Director's Plan	Land Boundaries Program (Toronto)	Director's Plans Log Book	Director's Plans (D - Plans)	yes	yes	
Cemetery Plan	-	Miscellaneous or Cemetery Log Book	Miscellaneous OF Cemetery Plans	-	yes	As deposits

4.3 Abstracting Documents and Plans

The parcel register in the land titles system is the counterpart of the abstract index in the registry system. A separate page is set up for each land parcel, on which the parcel description, names of owners and encumbrances on title are recorded. Two different parcel register formats are in use. One provides for entries in a narrative style, the other for a columnar style similar to that of abstract indexes. As parcels are divided (for example, as the result of a subdivision or condominium plan), new parcel register pages are created for each of the divisions, and the former parcel register pages are closed where appropriate.

The abstracting clerk checks the information on title against the document. As in the registry system, abstracting requires technical expertise and is not merely a clerical function. The abstracting staff must also be able to determine the legal effect of the document. The Province is financially liable for any errors made in the abstracting process. Entries in the parcel register are usually typed, and all are verified and signed by the land registrar, a deputy or an authorized signing officer. The certificate of registration stamped on the original and any duplicates is signed after the document has been abstracted. It is at this point that a document is officially registered in the land titles system.

4.4 Maintaining Writs of Execution

A creditor must request the sheriff to forward a copy of a writ of execution to the land registry office in order to bind land in the land titles system. There is no such requirement in the registry system. The date and time of day are either machine-stamped or hand written on the face of the writ. The writ is then assigned a number obtained from a unique sequential numbering series controlled by means of a log book or machine stamp.

An index card is then normally prepared to facilitate the search process. The cards are organized alphabetically by name. In cases where a card already exists for the same name, another entry is made on the existing card. The Toronto and York South and the York North offices use business machine print-outs instead of index cards. Daily updates and a complete print-out every two weeks are received from the sheriff's office.

Writ of execution releases are received with the writs from the sheriff's office. Separate identification number series are not used for writs and releases, as both are stored in the same file, separate from registered documents. The card index file is then updated.

If the index card on which the writ is entered contains only one entry, it is removed from the file. Otherwise, procedure is followed if a writ is not renewed before it expires (after 6 years).

Anyone wishing a certified search for writs of execution against an owner completes an order form and presents it to the clerk, who examines the card index file for the name given or any similar name. The search is done by name only; no other identifying information is used. Any apparent writs are noted on the order form. Upon completion of the search, the form is officially signed and stamped with the date and time. A carbon copy of the completed form is retained in the office.

Problems of identification become significant when the owner has a name that is common to many debtors. Office staff sometimes disagree among themselves as to whether a name is similar to another.

4.5 Processing "First Applications"

The purpose of an Application for First Registration is to transfer land from the registry system to the land titles system. The Property Law Program normally performs an approval function, with the rest of the work being done in the land registry office.

The material submitted by the solicitor includes an Application, Reference Plan (4 prints), Solicitor's Abstract and Certificate, and a Statement with respect to Adjoining Lands.

The land registrar checks the documents for completeness, opens a first application file folder and records the application in a log book. The application is recorded in the fee and receiving book. A Notice of Application is then registered under The Registry Act.

The Solicitor's Abstract is reviewed to make certain that it adequately supports title. The Statement with Respect to Adjoining Lands is also reviewed. If necessary, the solicitor is advised of any corrections or clarifications that are required. These requisitions are in addition to any that might later be made by the Property Law Program.

The application and search material are then checked against the accompanying reference plan. Discrepancies are noted on the plan. A draft parcel entry is also prepared. The marked-up reference plan and draft parcel entry are both included in documentation packages that are submitted to the Land Boundaries Program and the Property Law Program for their review and approval.

When the approved documentation has been received by the land registry office, a subsearch is done to bring the Statement with Respect to Adjoining Lands up-to-date. Copies of the reference plan, for service of notice, are requested from the surveyor. A Notice of Application, together with a copy of the reference plan, is sent to each adjoining owner and mortgagee. If there are any objections from these owners or mortgagees the land registrar holds a hearing. He may request the Property Law Program to perform this function.

Upon completion of the hearing and appeal process, the Land Boundaries Program requests the surveyor to complete the original linen of the reference plan. The plan is formally approved by the Land Boundaries Program and forwarded to the land registry office, where it is logged and filed. At the same time, a subsearch is performed to bring the draft parcel entry up-to-date. By this time, replies to the requisitions to the solicitor will have been received, and these are reflected in the final parcel entry.

Finally, the Certificate of First Registration is prepared and registered in the registry system. The parcel register is signed, the first application log book updated, and a notice of registration forwarded to the Property Law Program.

Delays in processing First Applications can usually be attributed to incomplete or erroneous material received by the land registrar. Sometimes an error or omission in a legal document or title search is not detected at the outset, but is discovered sometime later in the process.

C. HEAD OFFICE

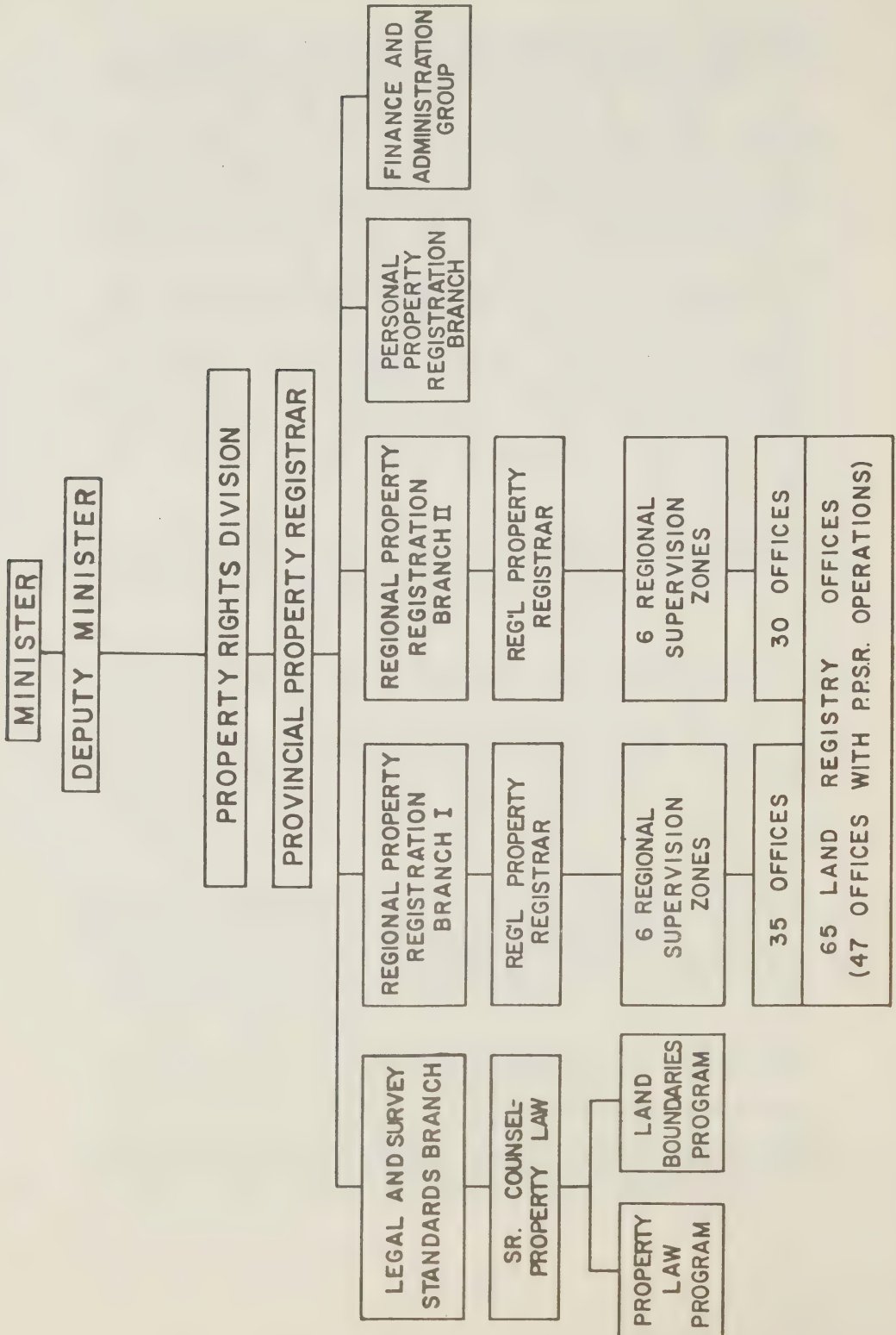
The Provincial Property Registrar is responsible for the administration of the Province's land registration system. To assist him, a number of head office responsibility areas have been established. Figure 20, page 65, shows the current head office organization. It includes:

- Branch I and Branch II head office functions;
- The Property Law Program; and
- The Land Boundaries Program.

The Property Law Program and the Land Boundaries Program form the Legal and Survey Standards Branch.

CURRENT ORGANIZATION CHART

PROPERTY RIGHTS DIVISION



1. Branch I and Branch II Head Offices

There are two Regional Property Registration Branches. Branch I is responsible for 35 land registry offices; Branch II for 30. To assist in the supervision of these offices, five land registrars and the deputy director in each Branch are designated as Regional Supervisors. Branch I and Branch II head offices are responsible for:

- operation of the 65 land registry offices in Ontario;
- ensuring that those offices are properly managed;
- ensuring that acceptable levels of service to the public are maintained;
- determining that operating procedures are in accordance with statutory and regulatory requirements;
- policy development, including both short term and long range program planning;
- manpower planning, including staff development and the adequate and effective utilization of staff resources; and
- effective control over all operational functions, including financial procedures, accommodation and office equipment.

A number of head office control reports monitor the operation of the local offices. It is these information needs that the land registration system must satisfy. These needs are considered part of a larger head office management information system.

Operational control is achieved through a series of reports provided by each office. These include:

- weekly activity reports;
- monthly returns;
- quarterly returns; and
- annual returns.

By statute, the Director of Land Registration must prepare an Annual Report. Information for this report is assembled from a number of sources. Branch I and Branch II, through their annual reports, provide the required land registration system activity statistics.

A major objective in each office is to be current in recording registered documents. Some time ago a guideline of three days maximum backlog was established. All offices are monitored, using weekly activity reports, for concurrence with this guideline. Whenever possible, remedial action is taken to eliminate excess backlog in an office. Normally, staff overtime is scheduled until the problem is resolved. The Regional Supervisor monitors the situation to ensure that improvement does take place.

Record maintenance, staff training, internal audit and quality control reviews are conducted on an ongoing basis. Every effort is made to properly serve the needs of land registration system users. However, staff and monetary constraints must be relaxed if proper service is to be provided. Record maintenance, remedial and improvement projects must be funded in order to maintain an acceptable level of operational efficiency.

2. The Property Law Program

The Property Law Program performs four major functions:

- legal interpretation (The Land Titles Act, The Registry Act, The Certification of Titles Act, The Boundaries Act and The Condominium Act) of the five Acts relating to land registration;
- support of the land registry offices in carrying out the requirements of those Acts;
- monitoring land registry office legal activities; and
- processing various applications.

Staff lawyers also deal with the wide variety of legal problems which may occur during the registration process. Depending on the nature and magnitude of the problem, they:

- provide personal, telephone or written responses;
- issue formal legal rulings or instructions through bulletins or procedural guides; or
- draft regulations and legislation.

The Property Law Program is involved in processing:

- First Applications, to transfer land from the registry system to the land titles system;

- Applications for Certificates of Title, certifying title in the registry system;
- Condominium Approvals, approving condominium declarations; and
- Applications for payment from the Certification of Titles and Land Titles Assurance Funds and the Land Titles Survey Fund.

Much of this work is conducted in conjunction with the Land Boundaries Program.

The Property Law Program is responsible for final approval in each of the above areas. In the case of First Applications, much of the preliminary work is usually done by land registry office staff. In some cases where qualified land registry office staff is not available, the work is done by the Property Law Program. Similarly, hearings may be conducted by staff solicitors to assist the offices.

The Property Law Program does not normally become involved in the day-to-day activities of the land registry offices. However, a Quality Control function has been established to assist in this area. Quality Control staff:

- respond to requests for assistance in resolving registration and records related problems from land registry office staff and lawyers; and
- visit land registry offices on a regular basis to monitor legal work quality and effect corrections and improvements, if necessary.

Property Law functions are oriented towards three major objectives:

- maintaining effective land registration legislation and regulations;
- maintaining the legal quality of land registration system records; and
- upgrading local office legal capability, and providing specialized support where necessary.

Changes in several areas would help fulfill these objectives. Simple formalized procedures would reduce record-keeping and registration problems. With uniform procedures, the work of the offices and the legal profession could be monitored effectively. A higher standard of legal work by the profession and a uniform approach to record-keeping in all offices would result. Local offices should become much more self-sufficient.

3. The Land Boundaries Program

The Land Boundaries Program is responsible for quality control of, and remedial programs for legal surveys, plans and descriptions. In carrying out their functions, staff surveyors are governed by six Acts:

- The Land Titles Act;
- The Registry Act;
- The Boundaries Act;
- The Condominium Act;
- The Certification of Titles Act; and
- The Surveys Act.

They are also governed by the legal principles and practices of cadastral surveying. As well, a knowledge of many other Acts is often required.

All survey plans entering the land titles system are examined and approved for professional quality by Land Boundaries Program staff. Reference plans and subdivision plans entering the registry system are examined by land registry office staff. The Land Boundaries Program provides training and guidance to this staff. The Program also monitors plans accepted in that system and assists in plan examination and approval when required.

Plan examination and field survey examination for all special applications are handled by the Program. The special applications are:

- First Applications;
- Applications for Boundary Confirmation;
- Applications for Certificates of Title; and
- Condominium Approvals.

Land Boundaries Program surveyors are responsible for plan approval in each of the above areas. The Examiner of Surveys hears applications for boundary confirmation under The Boundaries Act. Staff surveyors also assist Property Law Program lawyers conducting hearings involving boundary and description issues.

The Land Boundaries Program is involved with the land registry offices in the review and production of Registrar's Compiled Plans. They also deal with a variety of other survey problems which arise during the regular registration process. Response to those problems normally take the form of:

- written or telephone resolution;
- formal instruction bulletins, policy letters or procedural guides; or
- assisting the Property Law Program in amending the legislation or regulations.

The objectives of the Land Boundaries Program are:

- to provide a stable and ascertainable definition of location and boundaries for all patented land in Ontario;
- to maintain the quality of boundary data in the land registry system at a professional level; and
- to ensure land registry office staff plan examination skills and to provide specialized support where necessary.

If the Land Boundaries Program is to fulfill these objectives, the following improvements are required:

- a series of dynamic property maps must be available for the Province;
- a unique property identifier must be used for each parcel;
- all property related surveys must be recorded in the land registration system;
- the processes for confirmation of boundaries and conversion to the land titles system must be simplified;
- all title information must be recorded in the land registration system and all indexes must be organized on a parcel basis;
- factors contributing to unacceptable delays in the plan examination process must be eliminated; and
- there must be an adequate supply of properly trained land registry office plan examiners.

D. THE USER COMMUNITY

The land registration system must offer an efficient and effective service to its users. No examination of this system would be complete without evaluating the needs of the "user" community. The primary users are:

- the general public;
- the legal profession;
- the survey profession; and
- bulk users.

Each type of user has his own unique requirements. Figure 21, page 72, illustrates the major users and their activities within the offices.

One common element is present. The offices are a depository of documents and plans related to patented land. All other activities are a by-product of this one basic function.

1. The General Public

Land registration information and records are considered to be part of the public domain. Any member of the public has unrestricted access to information within the system. In practice, however, most people are unaware of the system. A lawyer or surveyor is generally called in to perform any work required by the individual.

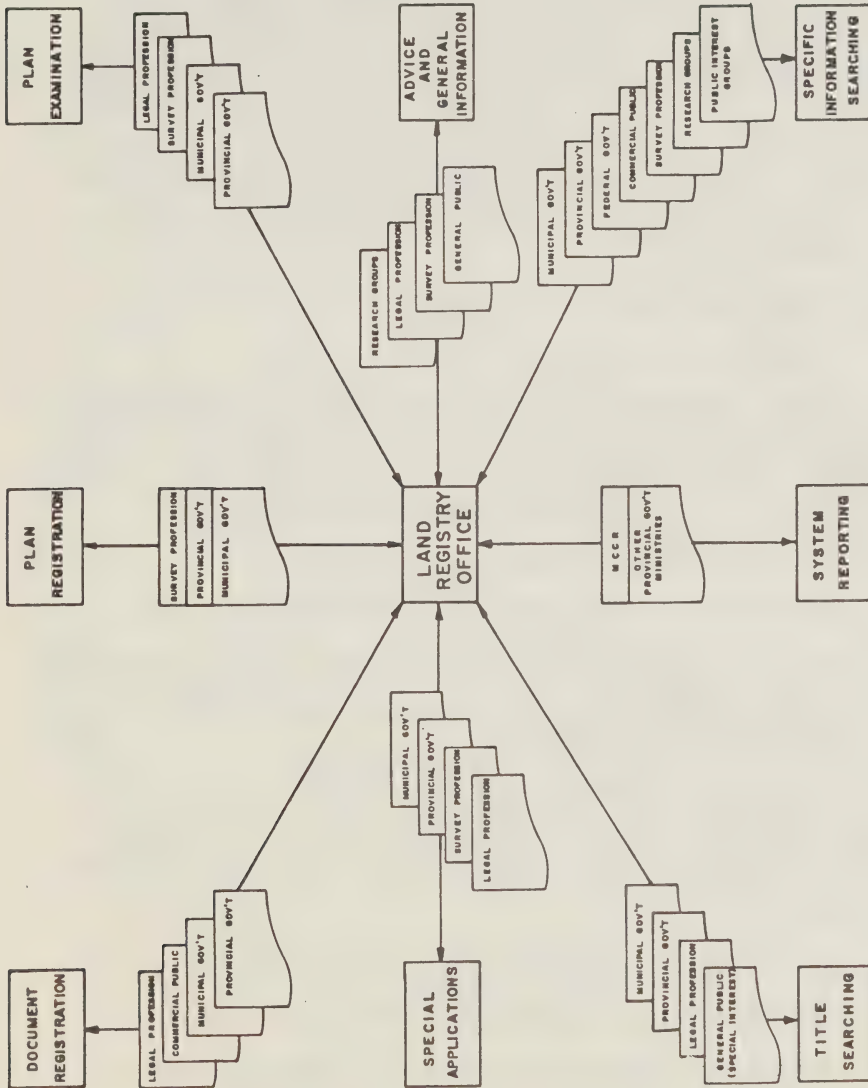
Definition of property lines and boundaries requires the technical expertise of a surveyor. The conveyance of a property and the protection of title interests normally requires the expertise of a lawyer. Thus, although the registration system is open to all, the expertise necessary to deal with land and interests in land is not generally found in members of the public.

To use the system, the general public has only two major requirements. The system should be simple to use and easy to understand.

This might be partially accomplished through simplified procedures in the land registry offices or with step-by-step instructions for the general public. However, even this is not likely to promote widespread use of the system directly by non-specialists. The need for the expertise of the specialist would, in all likelihood, remain. The large body of law involved in the conveyancing process would also have to be greatly simplified before widespread use by the public would be possible.

FIGURE 21

USER/ACTIVITY RELATIONSHIP AT THE LOCAL LAND REGISTRY OFFICE



2. The Legal Profession

Lawyers and their title searchers are by far the heaviest users of the land registration system. The majority of this results from the lawyer acting for a land purchaser or mortgage lender. The lawyer is concerned with much more than the land registration system when involved in the conveyancing process. Figure 22, page 74, the lawyer's paper world, illustrates the diversity of his activities. Although the land registration system is only one aspect of the lawyer's world, it is a major part of the conveyancing process. The two primary purposes for which the lawyer makes use of the system are:

- title searching; and
- document registration.

The lawyer performs his search by identifying documents which may affect the property. If the property is in the land titles system, the lawyer examines only the current entries on the parcel register. However, in many cases, it is also necessary to search for:

- corporate owners after 1968; and
- violations of The Planning Act after June 1967.

Entries in the parcel register are very brief. Specific terms are not set out. Therefore, the lawyer will normally examine the original documents referred to by entries affecting the parcel.

In the registry system, if the property is part of a lot, the lawyer must analyze all of the entries and sometimes many of the original documents to determine which documents affect the property. The search extends back for at least forty years. Thus, the search may involve:

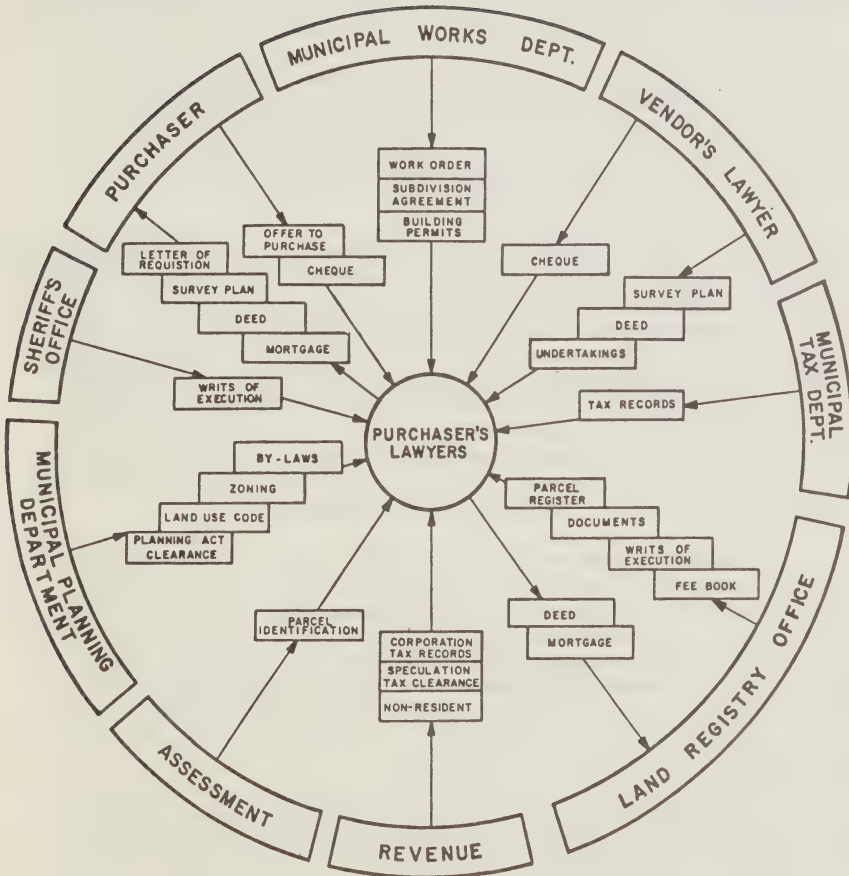
- searching back through a succession of books;
- searching in various places in one book; and
- analyzing hundreds of entries to identify the documents which will have to be examined.

Again, the lawyer will obtain and examine the original documents.

Having obtained all relevant information from the land registration system, the lawyer must then consult other files located elsewhere. He determines whether the extent and location of the property and structures on

FIGURE 22

THE LAWYER'S PAPER WORLD



it comply with the agreement of purchase and sale and the relevant municipal by-laws. The lawyer also searches for writs of execution. Under the registry system, he must search against the vendor and all previous owners at the local sheriff's office. This is often located in the same building as the land registry office. In some other cases, the two are linked by teletype or direct telephone line. In the land titles system, he searches against the current owner only. Moreover, the writs file is maintained within the land registry office.

At the time of registration, the lawyer must also have obtained the necessary affidavits and clearances. Usually the lawyers for all concerned parties attend at the land registry office to close the transaction. Registration by mail is possible, but is common only in northern Ontario.

Documents in both systems are examined to ensure compliance with registration requirements. In the land titles system the registration clerk must also compare them with the parcel register. At the time of registration the clerk assigns registration numbers and enters these in pencil in the parcel register. Later, formal parcel register entries are made. Registration is effective when the entry is signed. If review prior to signing the entry indicates that a document was accepted in error, the document can be returned within a defined period and the entire registration process nullified.

The lawyer subsearches the abstract index book or parcel register and the fee and receiving book to bring his previous search up-to-date. (In the land titles system he sometimes subsearches only the parcel register.) Assuming all is in order, he hands the documents to the registration clerk. Documents are not compared with the abstract index. Once registration fees are paid and a registration number is assigned, documents are officially registered.

In both systems, duplicates of documents are returned to the lawyer. This completes the registration process.

To serve the lawyer's needs:

- the system must be capable of entering and retrieving information easily and quickly; and
- the information retrieved must be accurate, current, complete and easy to use.

These objectives may conflict. The ability to register documents easily and quickly must be balanced against the need for thorough checking to maintain the desired quality level.

An effective balance of these conflicting needs is essential to any system improvements.

3. The Survey Profession

The surveyor also deals with more than the land registration system. Figure 23, page 77, the surveyor's world, illustrates his activities.

The surveyor performs two major functions on behalf of clients:

- the establishment of boundaries and descriptions for newly created parcels of land; and
- the re-establishment of boundaries and descriptions for parcels which already exist.

Boundaries and descriptions are created during the consolidation or subdivision of land. The surveyor is expected to establish new parcel boundaries using surveying markers and natural features. These boundaries are then registered and stored in the land registration system in the form of plans and descriptions. In order to be registered, surveys and plans must be certified by an Ontario Land Surveyor.

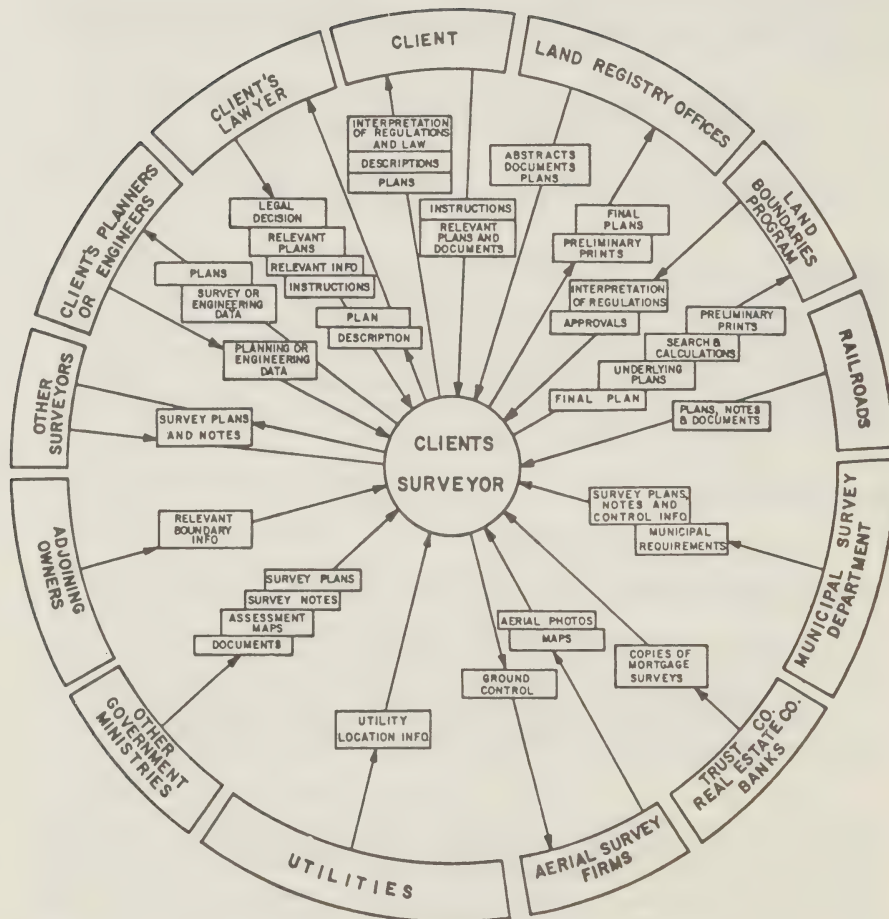
Re-establishment of a boundary may be required to:

- prepare a new survey;
- replace unsatisfactory verbal descriptions;
- resolve disputes regarding boundaries; or
- proceed through the First Application or Certification of Titles procedures that are often mandatory before subdivision of land.

In order to re-establish a boundary line, the surveyor often has to retrieve previous survey information from the land registration system. Since a boundary remains in its original position regardless of changes in ownership, this may mean having to search back to the original crown grant. The information obtained, in combination with evidence obtained from the ground, is used to prepare a survey plan reflecting the re-established land boundaries and descriptions.

The surveyor is also held responsible for the quality of his work. In many cases, he may be establishing boundaries based upon his opinion and the best evidence available to him at the time. Administrative review of his work through plan examination and hearings is an

FIGURE 23
THE SURVEYOR'S PAPER WORLD



integral part of the current system. The surveyor does not have the authority to settle matters of boundary. Even if adjoining owners agree with the surveyor on the proper placement of a boundary, the administrative review, although somewhat shortened, still takes place.

In general, the surveyor has three major needs. These are to:

- have a smooth procedure to quickly and easily enter survey information into the land registration system;
- have an efficient system of retrieving complete survey information directly from the system without having to search title records; and
- reduce the time and expense involved in the administrative review of survey work.

4. Bulk Users

Bulk users of land information can be generally identified as:

- all agencies who maintain duplicates of selected portions of the land registration systems property records. This includes housing, development, surveying, engineering, mapping, planning and environmental control agencies, (e.g. Ministry of Housing, Metropolitan Toronto Conservation Authority);
- utility and transportation agencies whose projects require massive amounts of information related to land use, ownership and boundaries, (e.g. Bell Canada, Consumer's Gas, Canadian Pacific Railways);
- tax assessment and real estate agencies who must continually up-date their ownership and land records, (e.g. Ministry of Revenue - Assessment Division); and
- market survey agencies who collect, organize and distribute statistical information on land use, ownership, values and mortgages, (e.g. Teela Market Surveys, Statistics Canada).

They can also be classified into four broad categories in terms of volumes of information required:

- users requiring complete information and documentation for a large number of properties at periodic intervals;
- users presenting large volumes of documents and plans for registration or deposit;
- users requiring abstracted information from all current property transactions, compiled and reported at regular intervals; and
- users requiring abstracted current and historical property information on an infrequent basis.

At present, bulk users are constrained by the same search techniques that apply to users interested in only a single parcel record. They often have to resort to resources outside the land registration system to identify those parcels which lie within their project areas. In most cases users must also compile their own property map to determine the relationships of adjacent parcels. These maps normally are not made available to other users with interests in the same properties.

The information requirements of bulk users often result in a demand for many photocopies. This causes delays in the photocopying process for all users. It can also necessitate additional trips to the land registry offices for bulk users.

Most bulk users are agencies of one of the three levels of government. As such, they are granted special consideration in some activity areas.

The special considerations involve the areas of:

- Fees:

Provincial government agencies pay no fees to the land registration system. Two agencies are charged for copies on a cost recovery basis because of the large volume of transactions involved. Charges are invoiced monthly instead of being payable at the counter. Special arrangements have also been made for some Federal government agencies.

- Recording Procedures:

Two special indexes are maintained in the land titles system to simplify the registration process for two major bulk users. These are the Highways Register and the Trans-Canada Pipeline Register. Comparable indexes are not maintained in the registry system.

- Plan Examination and Approval:

The Ministry of Transportation and Communications (MTC) operates a large and highly expert surveying unit. Accordingly, they are allowed to examine and approve their own survey plans prior to registration. This privilege is also extended to the offices of the Surveyor General of Ontario and Surveyor General of Canada Lands.

- Information Abstracting and Reporting:

The Ministry of Revenue receives regular monthly reports relating to land transfer tax, land speculation tax and retail sales tax. The reports indicate the number of transfer documents, amounts of taxes and exemptions. The Assessment Division of that Ministry also receives copies (either paper or microfilm) of all transfer documents. These are used to maintain their property tax files and to update their maps. Many land registry offices obtain assessment maps to assist searchers.

- Public Service:

Free access to the records is often provided for historical and geneological societies as well as for university research projects and local activities.

The Ministry of Consumer and Commercial Relations may be considered a bulk user of the system. Large volumes of boundary and ownership information are extracted from the system when compiling registrar's abstracts and Registrar's Compiled Plans. First Applications and Applications for Certificates of Titles also result in extensive use of existing records.

Most plan examination, title conversion, certification and hearing procedures in the land registration system require that the applicant through his agent (surveyor or lawyer) provide copies of all supporting information. This requires the agent to obtain copies of records from the system and then to present them back to the system.

In summary, bulk users use the land registration system to:

- enter and extract large volumes of documents and plans;
- identify all parcels in a given project area and determine their spatial relationships;

- obtain information abstracted according to pre-determined criteria and reported either regularly or as required; and
- supply copies of records obtained from the system back to the system in support of special applications.

E. CURRENT SYSTEM VOLUMES AND STATISTICS

This Section completes the discussion of the current situation by reviewing system statistics in terms of:

- registration volumes;
- fee revenue; and
- operating costs.

Registration volumes and fees were taken from the Director of Land Registration Annual Reports. Operating costs were derived from the Public Accounts statements. Figure 24, page 82, shows the growth in registration volume over the period 1961 to 1977. A 5% compounded registration growth rate has been assumed for the future. This rate has been used for all volume projections throughout the remainder of this report.

Although an average growth rate is satisfactory for volume projections, actual registration volume may vary markedly from the average. For example, an increase of about 10% occurred in 1977. The system has no control over these fluctuations.

Within the year, there are marked variations in weekly registration volumes. This is shown in Figure 25, page 83, which illustrates comparative weekly registration volumes during a typical year. The majority of closings occur at month-end. Additional peaks in registration volume occur at the beginning and end of the school term. Staff must be available to accommodate both the steady increase in registration volume and peak registration periods during the year.

Until 1973, system staff increased in proportion to volume increases. In the period 1973 through 1975, total staff remained relatively constant. The 1976 and 1977 staffing levels were also relatively constant but at a higher level than the preceding period, as the use of contract staff expanded significantly.

In 1977, about 950 people were on staff (excluding another 100 in the P.P.S.R. system). There were about 750 full-time staff and 200 contract staff. Contract staff are brought in primarily during high volume registration periods. They

FIGURE 24

REGISTRATION VOLUME

1961 - 1977

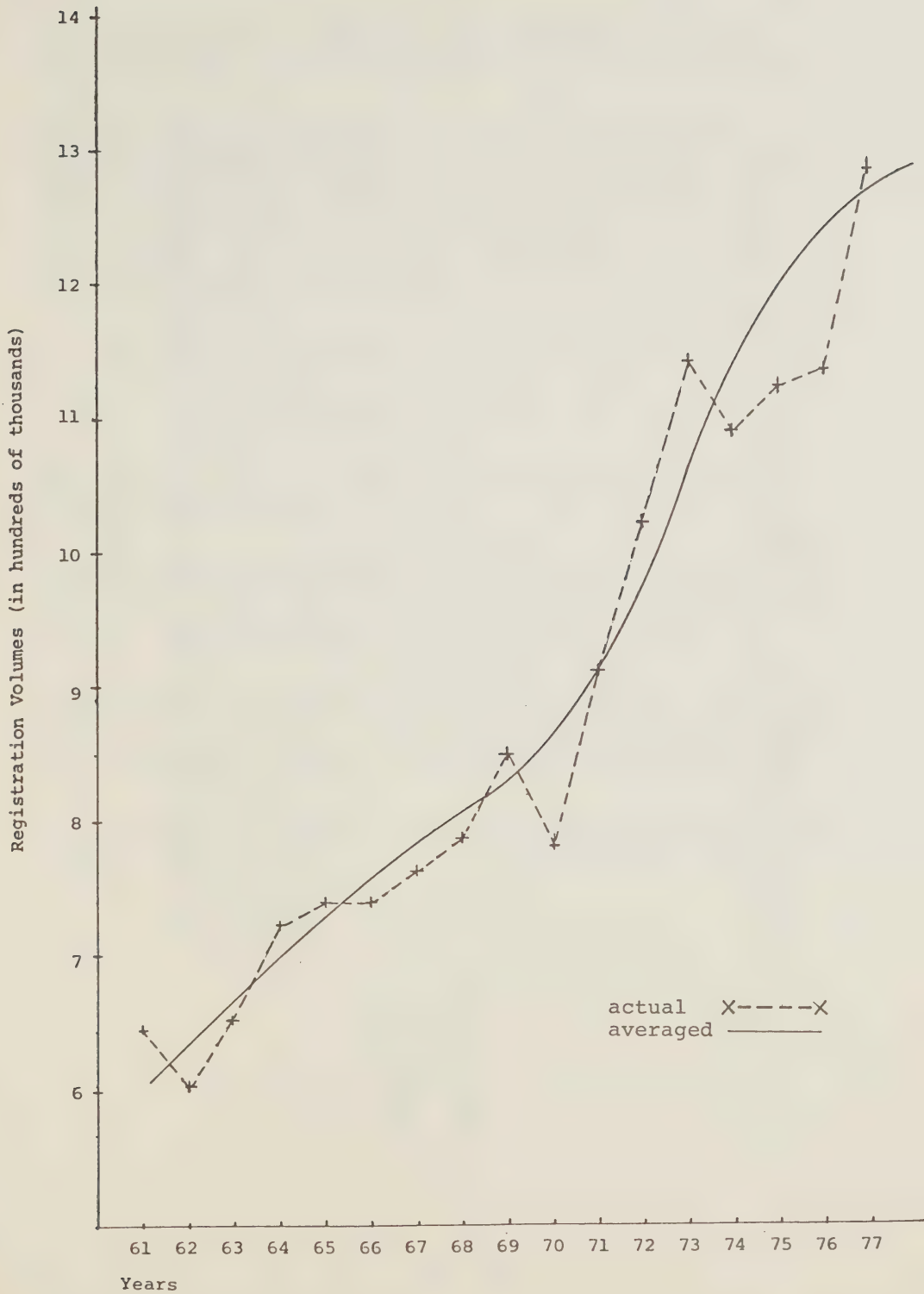
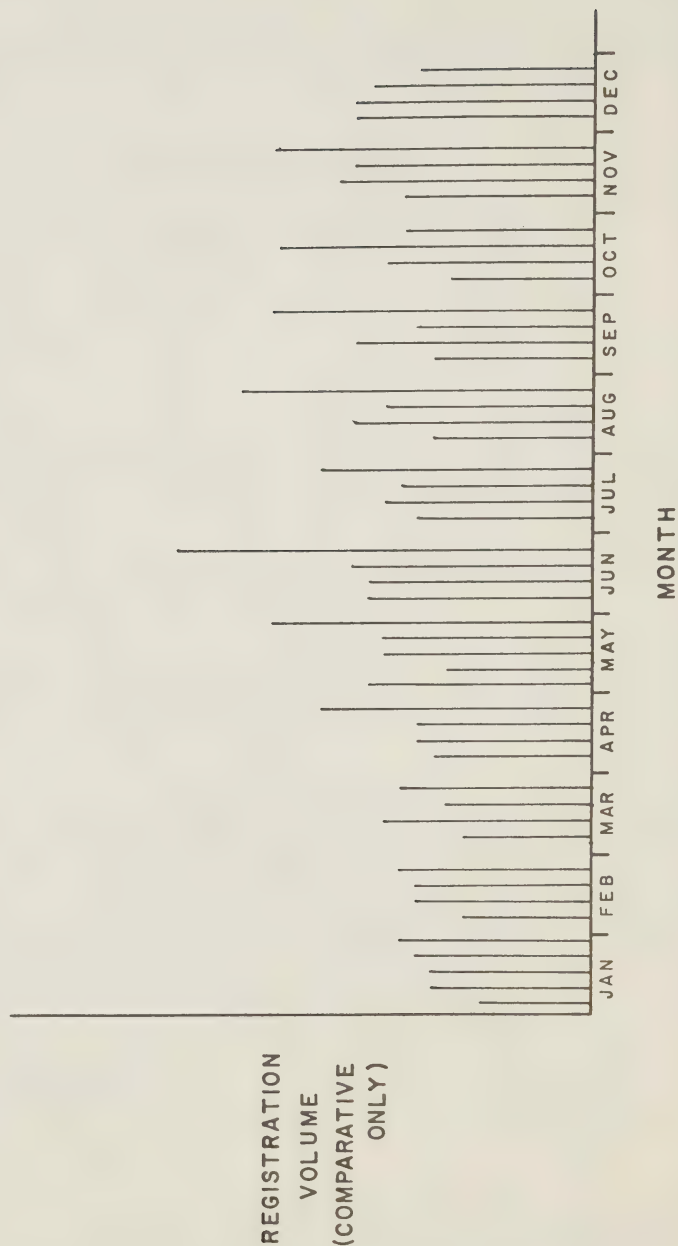


FIGURE 25
TYPICAL DISTRIBUTION OF REGISTRATION VOLUME BY WEEK



allow the system to respond to peak workload conditions. Full-time staff are now barely adequate for processing the "average" registration volumes.

Registration revenue, Figure 26, page 85, has shown an increase corresponding to the growth in registrations. It also reflects a fee increase in the 1976-77 period. The chart reflects only registration fees obtained from the public. It excludes the value of services performed for other branches of the provincial government. It also excludes land transfer and retail sales taxes collected for the Ministry of Revenue. If included, 1976 revenue (\$13,445,000) would be increased by:

- services for other agencies, \$463,000;
- retail sales tax, \$2,154,000; and
- land transfer tax, \$49,828,000.

The funds actually collected by land registration offices (\$65,890,000) are, therefore, about 5 times the value of registration fees alone.

Figure 27, page 86, illustrates the operating costs of the land registration system. It includes estimates of the administrative and space costs associated with land registration. It does not include operating costs of the personal property security registration system.

The growth rate in operating costs corresponds to the increase in registration volumes. This is to be expected. Land registration is essentially, a manual, paper-oriented system. No major revisions in operating procedures have ever occurred to change these features.

This completes the description of the current situation. The overall needs and objectives to be satisfied must now be examined.

FIGURE 26 - REVENUE 1968 - 1977

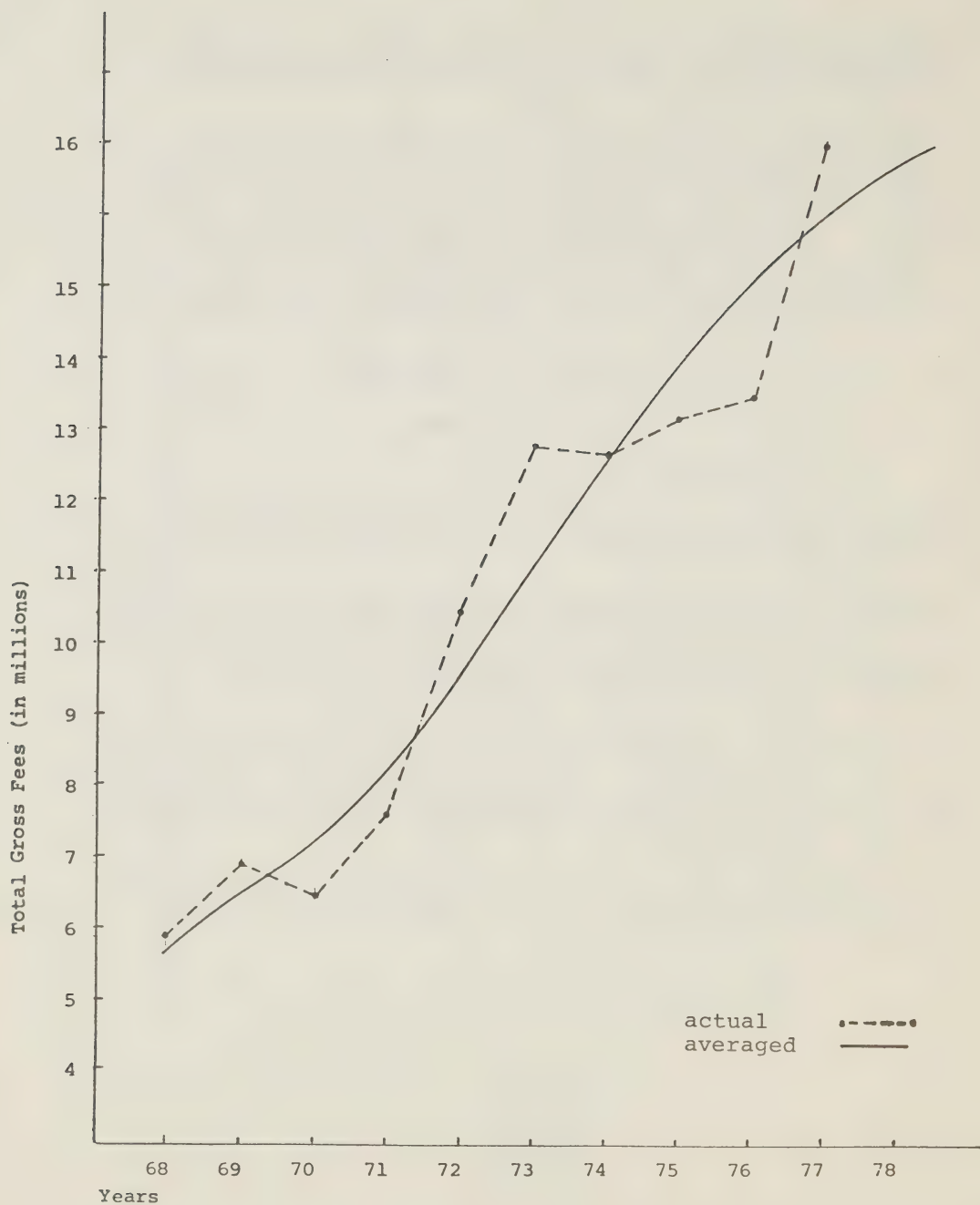
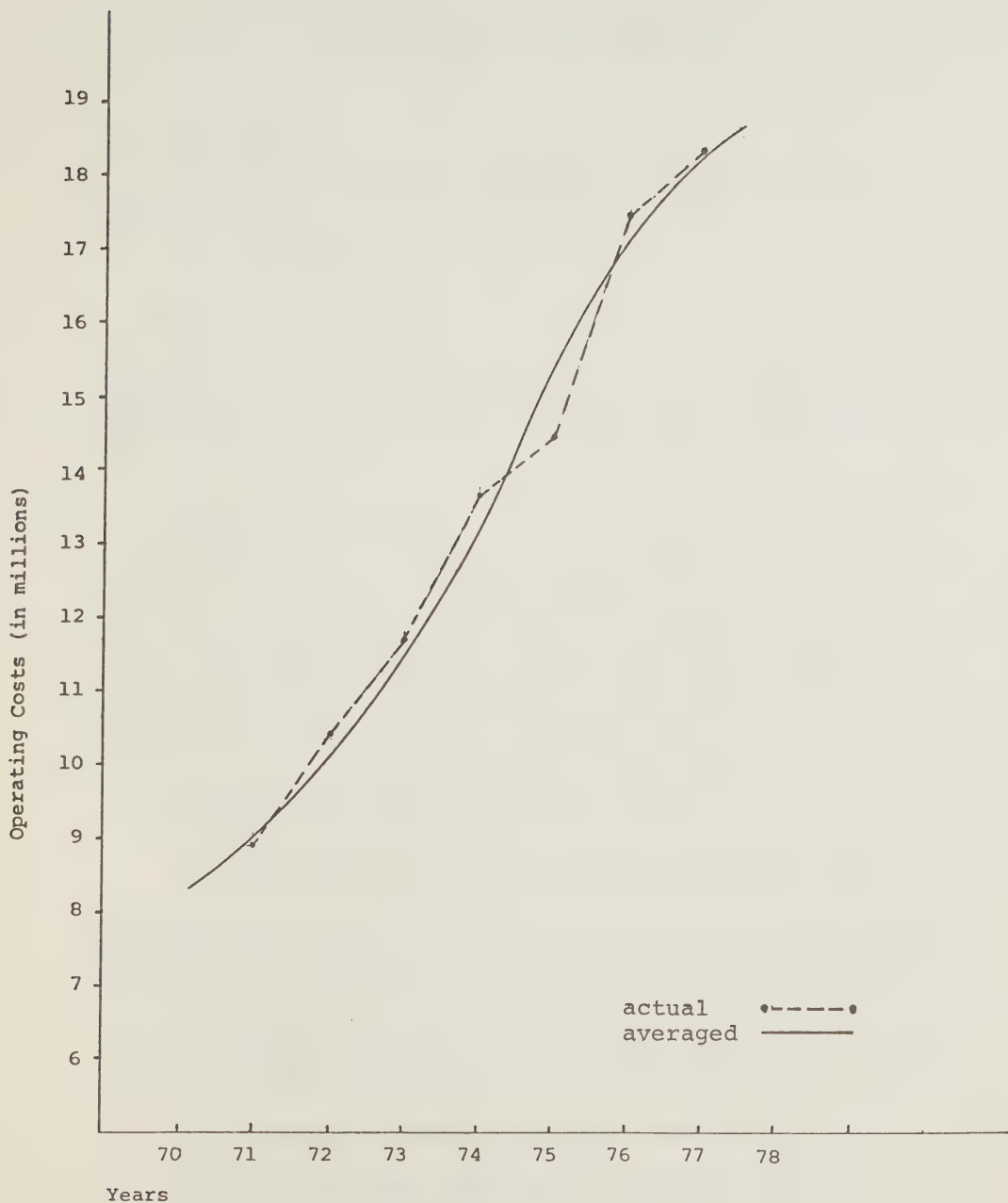


FIGURE 27 - OPERATING COSTS 1971 - 1977



IV

A SUMMARY OF SYSTEM PROBLEMS

A. INTRODUCTION

The previous Chapter discussed the functions and activities of:

- the land registry offices;
- the head office; and
- the user community.

A detailed examination of system operation showed areas where improvements could be made. Some problems are serious enough that changes must be made.

B. THE NEED FOR CHANGE

Comprehensive reform of the arrangements for land registration in Ontario is urgently needed.

This comment by the Ontario Law Reform Commission, from its Report on Land Registration, March, 1971, is echoed by both system users and operating staff. Since 1971, no major changes have been made to improve land registration procedures. This lack of improvement has resulted in:

- rapidly increasing operating costs, due to salary inflation and additional staff; and
- less satisfactory program delivery, demonstrated by the increasing level of complaints by system users.

Many of these problems can be directly attributed to growth. Registration volumes are increasing at 5%-10% (compounded) annually. The number of documents and the space required for their storage grows proportionately.

Recent legislation such as The Land Speculation Tax Act and the new Land Transfer Tax Act has also increased the office workload. This has resulted in:

- more document content to examine; and
- administering the requirements of other programs, especially the collection of tax revenue.

The added workload has been imposed upon the land registration staff. Additional office space, increased staff, and greater skills are required to support this growth. This is especially critical in the larger offices. Difficulties in coping with the volumes on peak registration days illustrate the increasing problems.

Recently, Provincial restraints on staffing and salaries have prohibited a proportional increase in the people and skills required to maintain satisfactory operation of the manual system. Reduced staff cannot adequately service user requirements. Only rapidly increasing use of contract staff has avoided operational breakdown to date.

Problems with the current system have been identified by both system users and operating staff. Most problems are dealt with on an unofficial basis. Relatively few are documented for formal resolution. Usually, difficulties are resolved through the cooperative efforts of system users and operating staff.

From time to time there has been a concerted effort by users to force a change in the system. Examples of these forced changes include:

- the addition of staff to the Toronto land titles office to cope with a serious backlog situation; and
- relocation or enlargement of the Brampton, Ottawa, Milton and Windsor offices to resolve serious space problems.

The problems are not unique to the Province. Land registration systems are undergoing change worldwide. Governments are discovering that land records provide an information resource. Registration systems are becoming land information systems. Land information is becoming a basic resource that modern government cannot do without.

Other government agencies (local, provincial and federal) are modernizing their recordkeeping systems to meet modern land information demands. However, they are forced to continue with manual processes in their dealings with the land registration system. Automated methods of providing the information required are not available. Because of its manual nature, the land registration system cannot adequately service the needs of these users.

The Ontario Law Reform Commission acknowledges that "existing systems have given reasonable security for the ownership of interests in land, and reasonable scope and security for creation and transfer of these interests". However, the Commission also comments that "the existing arrangements have worked only because they have been made to work by the continuous care of lawyers, surveyors and civil servants, at considerable cumulative cost".

A number of factors suggest that comprehensive change should be undertaken now. These include:

- the increasing volume of registrations;
- the lack of uniformity in operation of the offices;
- the increasing costs of a labour-intensive manual operation;
- the availability of low-cost, high-performance microfilm and computer systems; and
- the increasing amount of duplicate mapping, surveying and ownership information.

Problems with the current system affect both the system users and the staff. These basic problems must be discussed. The major issues that must be addressed to improve the Province's land registration system can then be identified.

C. BASIC PROBLEMS OF THE SYSTEM USER

Those attempting to use the land registration system face a number of basic problems. Depending upon their familiarity with the system and what they are trying to do, these may be minor irritations or major obstacles.

1. The Legal Framework

The legal framework for land registration is complicated and demanding. Even for the professional, there are a number of basic problem areas. To provide better communication between the system and its users regarding these problem areas, a "user committee" was set up a number of years ago. Representatives of the Property Rights Division and the Ontario Bar meet regularly to identify and resolve major user complaints.

The minutes of the user committee meetings show areas where formal discussion of problems has taken place. Of course, many other problems are resolved informally by local or head office staff dealing directly with system users. A review of the committee minutes, general correspondence and recent discussions identified the following as major problem areas:

- the lack of a complete title record; and
- the complexity of documents and the number of affidavits required.

A number of major complaints occur repeatedly. In some cases, users went so far as to submit suggested legislation to the Division for rectifying perceived shortcomings. The legal profession is well aware of the need to improve the legal framework for land registration. Of particular concern to them are:

- the title effect of The Planning Act;
- the number of unregistered government liens;
- the number of affidavits required for registration;
- the entire writs of execution system; and
- the length and complexity of documents used in conveyancing.

In addition, a number of comments reflect support for other detailed recommendations made later in this report.

2. User Education and Office Uniformity

The increasing workload and complexity of registration have not been matched by corresponding increases in staff. This has reduced the available time of experienced staff. In time, it will be difficult to deal in detail with individual registration problems of system users.

Thus, it will become necessary for each user to thoroughly understand the system and know exactly how to deal with it. Considerable work has been done to educate users. However, procedural guides covering some important aspects of land registration are not available. Moreover, the treatment and interpretation of land registration requirements is not uniform in all offices across the Province.

Thus, the user of the system does not have a ready reference to acceptable procedures. Also, there is no guarantee that information acceptable to one office will be accepted in another. For example, the rules regarding similar names in the writs of execution search process in the land titles system vary considerably from office to office. While some discretion is inevitable and will continue to be desirable, the variation in practices is too great to be acceptable.

3. Personal Attendance and its Problems

Most real estate transactions involve at least two visits to the land registry office. Personal attendance is costly and time consuming for both the user and system staff.

The first visit is to search the title. In order to conduct the search, personal attendance at the office is almost mandatory. No information can be obtained over the telephone. Currently, there is no effective method available for performing searches by mail.

The majority of lawyers would not conduct closings and register documents by mail. Closing is usually conducted in the office where registration can be observed as being effective. Personal attendance results in office crowding and service delays. This is especially noticeable on peak registration days.

All this contributes to the inefficient use of professional time and sometimes creates an unpleasant office environment.

4. Difficulty in Locating and Using the Required Index

Commonly known property identifiers are not used in the land registration system. Cross-reference files to street addresses and owner names are not provided to allow easy access to land registration system records. This sometimes causes difficulties and delays in identifying the index book necessary to begin a search.

Absence of unique land parcel identifiers is also a problem with the current system. Searchers continually have difficulty in locating the parcels in which they are interested. Assessment maps are sometimes used as an aid, but are usually not available. If available, they are not current and can only serve as a guide.

When the required book is identified, it may not be available. Only one copy of the index is kept in the office. It may be in use by the office staff or another user. This also causes a delay.

When the book is obtained it is often difficult to use. This is especially true in the registry system where information is often not organized on a land parcel basis and multiple pages or even multiple books can be encountered during the search process.

The poor condition of many of the older books required during an extensive title search is a problem in some offices. As well, obsolete information exists in the abstract index books, document files and microfilm files in many offices.

The required information is available. The problem is identifying and then using the books containing this information.

5. Repetitive, Extensive Nature of Searches

Each title searcher must recreate the work of those before him. The results of prior searches are not available from the system.

In the registry system title searchers must trace through the books for the appropriate documents to be examined. They must also examine many superseded documents. Even in the land titles system, a historical search for corporate ownership and compliance with The Planning Act is necessary. The user is also confronted with many long documents which lengthen the search process. Many affidavits must be examined, but there is no guarantee that the information they provide is valid.

Two characteristics of the registry system have been the subject of continuing controversy. The Canadian Bar Association has frequently requested a reduction in the length of the search period. Even the search rules which have been established to limit the period for which a search must be made have been lengthened in practice because lawyers consider them unclear. Thus, their usefulness is reduced. The organization of the index records is the second problem area. A search can involve a review of:

- unrelated entries on the same page;
- multiple pages of an index book; and
- multiple books.

Often a vague property description is the only identification for a particular land parcel. To identify the property, the searcher will often need to sketch a map of the original grant and its succeeding severances.

All these factors add to the difficulty of the search process and the time which the searcher must spend in the office.

6. Incomplete Title and Boundary Records

The land registration system does not contain all title and boundary related information. An exhaustive search of land registration system records will produce only part of the information needed by system users. This has major time and cost implications.

The process of searching for unregistered claims normally requires system users to visit or contact a number of other agencies such as the Corporations Tax Branch.

Obtaining land use information requires similar visits to various municipal offices. The majority of the required information is available in public files. However, some records such as mortgage surveys and survey field notes are not in public files and may not be available. Planning controls, tax liens and writs of execution are common examples of restrictions and unregistered interests created to support other programs. The incompleteness of the records means that:

- the user workload is increased;
- the staff workload is increased because additional examination of documents and reporting of statistics is required; and
- the land registration system information is less useful.

7. Slowness of the Processes

The land registration system works relatively well for registration of straight-forward documents and searches for current property information. However, registration of complex documents, processing of special applications and complex registry system searches are slow processes.

Registration of complex documents causes problems in two areas. Prior to registration, the document must be examined for compliance with legislation that can be difficult to apply and interpret. After registration, the document must again be examined to determine the form of the abstract entry and to identify the correct land parcel in the index book.

In many offices a user must go to a number of counter positions to complete his work. There may be separate counter positions for fee payment, registration, examination, index book requisition, plan requisition, writs of execution, searching, fee book inspection and obtaining photocopies. In addition, all processes involve some manual intervention and sometimes lengthy service times.

Services not related to routine searches and registrations such as First Applications, registrar's abstracts and Applications for Certificates of Title involve heavy staff workloads. The examination, requisition, notice, objection, hearing and appeal processes involve inherent delays. System service times for these processes are usually expressed in days or months. This is certainly an area in which improvements would be welcome.

8. Obtaining Selective and Aggregate Data in a Usable Form

The original purpose of the land registration system was protection of individual interests in land. It was designed to record individual transactions against individual parcels. Because record retrieval is manual, it is very difficult to obtain information of a bulk or selective nature.

More and more agencies now require massive amounts of information from the system on an on-going basis. The system was not set up to provide data for large numbers of transactions or groups of land parcels. The requirements of these "bulk information users" cannot be met by the manual system. The information is contained in the land registration system files. However, there is no economic or timely way to retrieve it.

The system user interested in obtaining bulk information must obtain it himself. The system is not oriented to producing it on request. Many organizations have turned to maintaining their own land registration information. This has led to a proliferation of land registration information files. Other agencies requiring the information on an on-going basis, in essence, maintain a duplicate set of records or, if computerized, transcribe the information manually for subsequent data capture.

This has enormous cost implications for system users. It results in a massive duplication of work for various government agencies. Major programs such as province-wide assessment mapping are undertaken because information retrieval capability in the land registration system does not meet the needs of bulk users. The potential for overall cost reduction and elimination of duplication alone is a major justification for some improvements to the land registration system.

9. Nature and Degree of System Assurance

The land titles system offers no clear definition of the degree of title and boundary assurance provided. The registry system provides no such assurances at all.

Even in the cases where compensation may be claimed there are some problems. The compensation fund in the land titles system is considered to be a last resort except in the case of recording errors. The amount of compensation is potentially limited. Further, there is an unrealistic limitation period for the lodgement of claims. There is no compensation fund in the registry system, but the government can be sued for losses caused by recording errors. Most of the problems, however, are the same as in the land titles system.

Even the land titles system offers only a limited assurance regarding the extent of the property.

D. THE BASIC PROBLEMS OF SYSTEM OPERATION

Many of the problems facing system users are also major concerns of the operating staff. Other problems are more a matter of system administration and efficiency. Both are discussed in this Section.

1. Reliance on Manual Procedures and Processes

The land registration system is essentially a manual operation. The most sophisticated item of equipment is a programmable calculator used to check and verify some survey calculations. All other operations throughout the system are of a manual nature. This has two consequences:

- the land registration system is labour-intensive; and
- there is a tendency towards non-standardized documents and office procedures.

Being labour-intensive, the system has difficulty in responding to peak registration workloads. Heavy registration activity or absence of a few key individuals can severely impair the ability of an office-to-office satisfactory service. The number, skills and morale of the land registry office staff are a continuing source of concern to system administrators.

Maintaining identical manual systems in the offices is an impossible task. All systems change to reflect local conditions, simpler ways of doing things, or misunderstanding of system requirements. These forces of change are present in all 65 offices. It is only reasonable to expect that there will be differences from one office to another.

For years, the system has been incapable of resolving many of the major user complaints. Primarily because land registration is a manual system, it is unable to provide the speed and flexibility of information handling that many users require. This is reflected in complaints received from users. The most frequently mentioned problems are:

- the long waiting time for search information;
- the lack of uniform operation from office-to-office;
- the delays experienced during peak registration periods;
- the backlogs and delays in entering registration information into the records;

- the poor description of many land parcels and difficulty in determining relationships to adjoining land; and
- the number and length of line-ups awaiting service.

In some cases, a large volume of correspondence has forced corrective action. In the past, large additions to staff usually resulted. For example, the Toronto land titles backlog of 23,000 unprocessed documents (3 months registrations) in 1972 forced the addition of a night shift abstracting section.

More recently, strict constraints on complement staff have resulted in a huge increase in contract staff to maintain service. The number has grown from 30 in 1972 to over 200 at present, added to approximately 750 regular staff. (There are another 100 in the Personal Property Security Registration system, which is also administered by the Division.)

The land registration system is entirely dependent upon manual methods for:

- examination;
- registration;
- fee book entry;
- abstracting;
- filing; and
- retrieval.

System users are dependent upon efficient system operation in each of these areas. Operational breakdown of the system occurs when delays in any of the functions increase excessively. Such delays also result in significant increases in user and system operation costs.

Since the system is primarily manual and utilizes clerical staff extensively, checking and double-checking procedures are used to ensure the accuracy of information handling. Usually, the same information will be reviewed by a number of people and transcribed into several formats. This process is inherently inefficient.

2. Degree of Knowledge Required for Checking and Abstracting

Documents and plans submitted to the system are often complex. Standardized forms suitable for automated processing are not used. The documents must be examined

in detail at the time of registration. The rules regarding acceptability are complex. In addition, input must be reviewed for compliance with legislation outside the land registration system.

Interpreting documents and plans requires highly skilled staff. Considerable judgement must be exercised in both examination and abstracting. Recruiting, training and motivating of this staff is increasingly difficult.

Without adequately trained, skilled staff, the system will deteriorate. Invalid and incorrect information in the system would very quickly destroy user confidence in the system.

3. Need to Deal with Other than Routine Search and Registration Procedures

Offices are equipped to deal reasonably quickly with the normal registration process. However, there are other activities which are difficult to fit in with the regular workload.

Typical of these are:

- First Applications;
- registrar's abstracts; and
- Registrar's Compiled Plans.

Experienced staff are needed in each of these areas. However, the number of such staff and their availability is limited.

Many of these activities also deal with a number of properties. The system is set up to deal with individual properties. As a result, a great deal of manual work is required and time delays often occur.

4. Requirements to Produce Information and Special Reports on Demand

Offices must produce a variety of reports for head office and other government agencies. All reports have to be prepared manually. Some contain information that is repetitious or redundant. Some are used to monitor and enforce requirements of other programs. The number and complexity of these reports has been growing steadily.

Most of these reports are produced on a regular basis. The information they require is accumulated in the local office transaction-by-transaction. At the required reporting intervals, accumulated information is transcribed onto reporting forms and forwarded to the requesting agencies.

This is historical information. It reports on activity during the previous period. There are no daily indicators of office performance and unusual conditions.

There is no efficient way of producing information on a special request or demand basis. A manual review of each document is required. The staff necessary to conduct this type of search is unavailable.

5. Complicated Financial Procedures

The land registration system operates on an individual transaction basis. Fees are paid as individual services are performed. This results in many small transactions occurring in the office. Also, registrations fees vary according to the type of document being registered. Since tax collection may be involved, the total amount tendered depends not only on the type of document but on the terms and conditions of the transaction.

This creates problems for the system users and office staff. Dealing with so many small transactions and having to compute the amounts to be collected for registration and taxes is both time-consuming and error prone.

At the end of the day cash receipts must be balanced and distributed to the appropriate accounts. While this is done manually, most offices maintain a running "spread sheet" to assist the balancing and reconciliation process.

6. Dependency on Head Office Support

Offices generally have little problem with normal day-to-day activities. However, head office support is often required to handle complex problems, special activities and to overcome workload crises.

Some offices do not have an adequate supply of trained staff to handle special activities or abnormally high workloads. Thus, whenever a problem occurs, head office support is necessary.

This also causes problems in the head office areas. Head office must be capable of providing support to the local offices as required. On the other hand, there are few local office skills available to assist head office in any special studies and projects.

7. Information Security

The present system accepts original paper documents and plans for registration. Documents are microfilmed and plans are duplicated. Reproducible copies of plans and microfilm copies of documents are then stored outside the local office.

Copies of most plans are provided to system users. The original plans remain with the system staff. However, original documents are given directly to the public. Replacement of lost documents is usually possible since they have been microfilmed or recorded in "copy books". However, detection of altered documents is difficult if not impossible in the present system.

There is no back up at all for the abstract indexes and parcel registers. Moreover, there is little time or money available for remedial work to improve the security of the system.

In general, system safeguards against alteration, loss or theft of records are inadequate. Also, constant use of the originals eventually leads to their deterioration. This causes problems for both system users and staff. System efficiency and effectiveness depend upon the completeness, accuracy, legibility, organization and physical state of the records.

The low incidence of problems with information security is a compliment to the system's staff and its users. Nevertheless, this is a situation which cannot be allowed to continue.

8. Adequate Staffing, Facilities and Funding

Each office is expected to train its staff on the job. Training aids and formal courses of study are currently being developed. However, a program for advancement in the land registration system that attracts young people into the field as a career is not obvious. Salaries, in many cases, are not competitive with those paid for work of similar complexity such as title searching. These factors have contributed to a general shortage of experienced staff.

Storage of paper documents and plans is a continuing problem. Filing cabinets are bulky. More filing space is needed each year as new documents and plans are registered. There are already over 34 million paper documents stored in the system and over 1 million are being added each year. Therefore, approximately 70,000 square feet of floor space is already devoted to document filing and over 2,500 additional square feet is required each year.

Lack of space is a serious problem to both users and staff. Public pressure for adequate space has forced relocation of some offices to larger quarters. Some offices have been enlarged in the recent past. Most other offices are crowded and will require enlargement in the near future. Examples of new buildings or relocation include the facilities in:

- Brampton;
- London;
- Windsor;
- Kitchener;
- St. Catharines; and
- Milton.

E. AN IDEAL SYSTEM

An "ideal" system for land registration would resolve all the problems with the present system.

This ideal system would provide absolute security of land ownership. It would work well, quickly and cheaply. Information would be complete and readily available. There would be no delays and little paperwork.

It would also be a third land registration system in the Province. The land titles and registry systems exist now. The ideal system, if substantially different from the other two, would undoubtedly cause major confusion during the conversion period.

If improvements are made to both of the existing systems, transition will be gradual. In many areas, the differences between registry and land titles systems would lessen. In some cases, differences would disappear. Both systems would eventually come to look very much like the ideal system just described.

After improvement both systems would have:

- (almost) all claims on the title record;
- less paper on input, and in storage;
- simpler legislation and procedures;
- all properties uniquely identified;
- a map of all properties;
- indexes organized on a land parcel basis;
- title and boundary guarantees;
- a minimum of historical searching; and
- adequate staffing, facilities and funding.

Resolution of the existing problems and transition to improved systems is complex. Land registration policy, service levels and system features must be selected with care. To do so requires identification and analysis of the major issues affecting land registration.

F. IDENTIFICATION OF THE MAJOR ISSUES

Many of the problems of the current land registration system are interrelated. They cannot be solved in isolation. By combining related problems and breaking them down into their simplest form, the major issues become apparent.

1. Improvement of the Legal Concepts

Some legal features of the land registration system are extremely complex, labour-intensive and outdated. They involve much unnecessary work for the system and its users. The adequacy of the legal framework for an improved system is a most important issue.

2. Assurance and Compensation

The extent of the assurances and compensation provided by the system represents another area of concern. Different rules apply to each of the two current systems. These rules are often unclear or inadequate. Clear concepts and equitable procedures governing assurances and compensation are required.

3. Complete Property Information

In the context of the conveyancing process, the land registration system's records are far from complete. Users must refer to a number of other sources to evaluate rights in a land parcel. These additional searches waste both time and money. The incompleteness of the system's property records is a primary issue from the user's point of view.

4. Property Identification

The current system uses neither unique nor commonly known identifiers. Lack of unique identifiers results in records that are difficult to use. The unavailability of a comprehensive identification system is a major issue for both the system and the users.

5. Information Quality Controls

Verification of information during registration and abstracting is complex and time consuming. The integrity of the records is dependent on these procedures. They require skills that are scarce and costly. Information quality controls are an issue of much concern to the administrators of the system.

6. Information Retrieval

Getting recorded information out of the land registration system is often difficult and time consuming. Searches in the registry system are repetitive and usually extensive. Requests for service by telephone and mail are discouraged. Personal attendance for searching and closing is almost mandatory. Requests for bulk or aggregate data are difficult to service. They involve much staff time which is not readily available. Efficient information retrieval is one of the most obvious issues to be resolved.

7. Records Maintenance

Land registration records are not copied to provide duplicates for public use. Original record books and documents are handled extensively by the users. Security against theft or alteration is often rudimentary and frequently non-existent. Normal wear and tear gradually causes the records to deteriorate. Records maintenance is an issue of major concern to the system administrators.

8. Uniform and Efficient System Operation

A history of local autonomy has led to a lack of uniformity in some land registration operations. It is also partially the result of inadequate staff training in the past. Operational inefficiencies are reflected in slow processes and complicated financial procedures. Special activities often overtax the workload capacity of busy or understaffed offices necessitating support action by head office. Uniformity and efficiency in regular system operations represent a major goal.

9. Potential for Automation

The effectiveness of the land registration system is impaired by its manual, labour-intensive nature and its dependence on paper records. Demands for selected or aggregated information cannot be met. Operational reports to head office require many hours of tedious manual preparation. A potential for automation exists in almost every procedure and is a major issue in the consideration of system improvements.

10. Adequate Staffing, Facilities and Funding

Registration volumes continue to grow. Fee and tax revenues grow at a corresponding rate. However, constraints restrict growth of both staff and operating budget. As long as the current system is retained, increases in staff and budget are necessary to meet normal expansion and to resolve some fundamental weaknesses. This is an issue of primary importance to the system administrators.

A discussion of each major issue follows in the next Chapter.

THE MAJOR ISSUESA. INTRODUCTION

This Chapter begins the analysis of potential improvements to the Province's land registration systems. It sets out in broad terms the changes required to solve the problems identified in the previous Chapter. Discussion of why these particular changes are necessary and how they are to be achieved is left for later Chapters.

Ten major issues must be examined:

- improvement of the legal concepts;
- assurance and compensation;
- complete property information;
- property identification;
- information quality controls;
- information retrieval;
- records maintenance;
- uniform and efficient system operation;
- potential for automation; and
- adequate staffing, facilities and funding.

B. IMPROVEMENT OF THE LEGAL CONCEPTS

The land registration system operates within a basic legal framework. A number of legal concepts require modification and simplification. Appropriate changes in the legal framework will result in a system which is:

- more responsive to user needs;
- simpler to use; and
- easier to administer.

Some relatively simple changes would improve both existing systems. There is an obvious need to reduce the amount of paper entering the systems. Short standardized forms with fewer affidavits are required. This would reduce the work involved in preparing and examining documents submitted for

registration. The elimination of requirements such as personal seals will also reduce system and user workload. Modification of the rules governing restrictive covenants and easements will simplify the conveyancing process.

Other improvements are unique to the land titles or registry system. In the land titles system, the rules governing cautions, notices and leases require legislative clarification and revision. Adverse possession can resolve major title problems and should be allowed.

The registry system requires improvement in two major areas. First, the length of searches must be reduced. This requires legislative change. The statutory time period should be clarified and, if possible, shortened. Discharged interests should be purged from the index records. Searchers should be permitted to ignore expired interests. To reduce the need for historical searching, a comprehensive certification of title program should be undertaken.

The second major registry system improvement is reducing the difficulty of searches. This requires organizing the index records on a land parcel basis.

A comprehensive legislative program is required to implement these changes. Other changes to the legal framework arise from discussion of the remaining major issues. Some involve a significant departure from current legal philosophy. However, implementation of these changes will result in significant reductions in both user and system workload.

C. ASSURANCE AND COMPENSATION

"Assurance" is an affirmation that information provided by the system is correct. Compensation is provided when the recorded information is not correct and causes injury to innocent parties.

The present rules regarding assurance and compensation must be changed to:

- clarify and rationalize the levels of assurance available in the two systems;
- liberalize the rules regarding adverse possession in the land titles system; and
- allow more equitable compensation.

Three basic types of assurance or affirmation are possible. They relate to:

- recording errors;

- property title; and
- property extent.

Both systems currently provide compensation with respect to recording errors. This is a basic responsibility of any recording system and must continue.

There are three possible levels of assurance relating to property title:

- proper completion;
- proper execution; and
- legal effectiveness.

Affirmation of proper completion guarantees that all required documentation is present and that the documents have been filled in correctly. This affirmation must be provided in both systems.

Affirmation of proper execution makes the system liable for fraud and forgery. Neither can be detected by the system or its staff. However, the land titles system currently protects parties in these circumstances. This is considered to be a basic responsibility of a title registration system and should continue. Since the registry system is a recording system, this affirmation is not and should not be offered.

The affirmation of legal effectiveness is assurance that the interest exists. This is also basic to the philosophy of the land titles system. The land titles system must continue to offer assurance of ownership. It should also offer improved assurance of charge and tenancy relationships if a prescribed statutory format has been followed.

The registry system is basically a recording system. Affirmation of legal effectiveness is contrary to the nature of this system. Therefore, affirmation of legal effectiveness should only be offered in the land titles system.

Assurance regarding property extent is entirely dependent on the quality of survey information within the land registration system. With an adequate level of survey information, two types of assurance could be offered:

- useful existence; and
- precise location.

Affirmation of useful existence guarantees that the description of the property within the system corresponds approximately to its location on the ground. This is currently, and should continue to be, the affirmation offered by the land titles system.

Affirmation of precise location means that the property description within the system corresponds exactly to the situation on the ground. This type of affirmation should be left to the courts or other appropriate tribunals. It should be possible to record an affirmation of precise location in the system. However, because the affirmation is provided by a court or tribunal, no system assurance is necessary.

The affirmation of useful existence should eventually be offered by the registry system. This may be done in stages as the quality and organization of survey information in the system improves.

Adverse possession is not available in the land titles system. This can cause serious hardships in two situations. In the case of parcels or large parts of parcels abandoned by the registered owner, acquiring title by adverse possession should be allowed if the occupant meets certain conditions. It should also be allowed with respect to boundary encroachments.

Compensation is required where parties relying on the assurances provided by the system have incurred injury or loss. The assurance fund concept should be extended to the registry system to provide compensation for recording errors and omissions. Some restrictions on compensation should be removed. A maximum liability for a single claim should be established. However, the total liability should not be limited to the amount remaining in the fund.

In most circumstances, recovery must be attempted against any party who caused the loss. However, the applicant for compensation must not be required to undertake useless litigation where the defrauding party is judgement-proof.

D. COMPLETE PROPERTY INFORMATION

From the user's point of view, the lack of complete records is the most inconvenient, time consuming and costly shortcoming of the land registration system. Ideally, the system should contain all information related to title and boundaries. This would benefit all users by eliminating other searches and making more information readily available.

Complete title records would incorporate as much information as possible directly affecting title to land. Many of the important unregistered interests in land are government liens. Government liens against specific parcels (except the lien for unpaid municipal taxes) can and should be registered in

order to be effective. Any remaining general government liens, except those for unpaid corporations tax and succession duty, should be abolished. The procedures for dealing with these remaining general liens should be simplified for both the user and the system.

Recording all claims against title requires changes to legislation not administered by the land registration system. The existing writs of execution system should be modified. To be effective, a writ should be registered against a specific property. Creditors must therefore be able to identify the land owned by their debtors.

An index of all land owners and their holdings is needed. More information must be available to assist creditors in distinguishing debtors from other owners with similar names. This requires more complete owner identification on documents entering the system. Creditors should also be advised of subsequent property acquisitions by their debtors.

Violations of the subdivision control provisions of The Planning Act cannot be easily detected from the title record. In spite of this, a violation completely nullifies a conveyance. The violation should incur a monetary penalty and have no effect on title.

Land use information, such as zoning regulations, should also be available from the land registration system. The system users are vitally interested in both title and use information.

A complete survey record is also required. Currently, much survey information is kept in private files. These are often extremely difficult for the user to obtain even if their existence is known. This can cause duplication of effort. A survey may be done even though one that satisfies the user's needs already exists.

To assist in map and plan preparation, coordinates for all boundary corners should be submitted to and be available from the system. Relating these coordinates to the Ontario grid system should be required where enough control monuments exist and should be encouraged elsewhere.

E. PROPERTY IDENTIFICATION

Property identification is essential for storing and retrieving property information.

The current methods of property identification do not adequately serve the needs of all the users. Improved property identification should provide:

- easy access to all files and records in the system; and
- simpler, more effective methods for storing and retrieving information.

The property identification method must be easy to use. Access to property information must be possible through a number of property identifiers. The system must allow users to begin with a commonly known property identifier such as the street address. This should quickly lead to any unique reference numbers required to complete an activity.

There must be a unique property identifier for each land parcel in the Province. This would facilitate "parcelization" of all indexes throughout the system. Organizing all information according to the smallest ownership unit, the land parcel, would simplify the system dramatically.

Property maps are required to assign unique identifiers and illustrate land parcel relationships. Property maps must indicate the current status of land division. Land assembly or subdivision must be reflected on a map prior to registration of documents pertaining to that land. The office property map must be updated at the time a survey plan presented for examination receives approval.

The coordinates of the approximate centre of every land parcel should be calculated and recorded in the system. Selective retrieval of property information by geographic area then becomes possible. This can be of significant benefit to government and other agencies. It will result in eliminating much duplication of work and allows very significant savings.

F. INFORMATION QUALITY CONTROLS

Document and plan registration processes are time consuming. They require skills that are both costly and scarce. This is due to the relative complexity of the documents and plans and the examination and abstracting procedures. This complexity must be reduced without compromising the quality of information entering the system.

In both systems, the staff must verify that documents have been properly completed. Use of a standardized "cover page" containing the information necessary for registration is required to speed up acceptance of the documents.

Only the land titles system requires verification that the document is legally effective. Preferably, for complex documents, this should be done behind the counter prior to registration. This will allow the system staff to spread

the workload and reduce delays associated with checking at the front counter. Complex documents tendered for registration without prior approval should be examined at the counter and registered immediately only if staff workload permits. If it does not, they should be accepted for later examination. All other documents should be dealt with when tendered for registration, without the possibility of subsequent cancellation.

Improved quality controls are also required for the abstracting process. Ideally, the abstract entry should represent the intent of the registrant, not the understanding of the abstract clerk from review of the document. All information required for the abstract entry should appear on the first page of the document. This would minimize errors and misunderstandings.

Plan examination in the registry system is not consistent in all offices. Further, different procedures and skills are used in each system. In both systems it must be consistent and sufficient to ensure the required accuracy of survey information.

G. INFORMATION RETRIEVAL

The information retrieval process requires improvement. The improvements must provide the following benefits:

- easier and faster methods of providing information;
- the ability to quickly locate the required information; and
- less need for personal attendance at an office each time that information is required.

Fast service is a major requirement of the user. The time required to serve an individual user must be reduced. This need is especially significant in coping with the volumes experienced on peak registration days.

Efficient information retrieval requires unique property identifiers displayed on current property maps and cross-referenced to common identifiers. This allows users to easily identify their properties and request the proper information. Confusion in the system is reduced when duplicate and imprecise identifiers no longer exist.

Unique parcel identifiers allows separate access to survey and ownership information. Users should be able to select and obtain only the information they require.

This minimizes search time, potential search errors and the amount of information retrieved from the system. Copies of the parcelized information must be available to eliminate the problem of more than one user requiring the same record.

Ideally, the parcel registers and abstract indexes should be updated immediately to reflect registration activity. This would eliminate the need for lengthy subsearches in the fee and receiving book. Organizing the indexes on a land parcel basis will greatly facilitate subsearching.

Efficient mail and telephone service must be provided to reduce personal attendance in offices. This is especially useful where the user is located far away from the office containing the required records.

H. RECORDS MAINTENANCE

Records and documents are required for most of the work done in the land registration system. System efficiency and effectiveness depend upon the completeness, accuracy, legibility, organization and physical state of the records and documents.

Once documents and plans have entered the system, steps must be taken to preserve their existence and accuracy. Copies, rather than originals, must be supplied to the system users. Back up copies must be available for security.

Many of the records contain obsolete information. Usually, the user requires only current information. The existence of obsolete information adds to the difficulty of using the system. An efficient method of removing obsolete entries is required.

A complete historical record of information must be maintained. It is required by surveyors and others tracing title and boundary information from previous owners and subdivisions.

The system must maintain the validity of information stored in its document and plan files. Errors are bound to occur in any system. The land registration system must have a simple method for identifying and correcting errors as they are discovered.

The discussion of other major issues has identified some improvements related to records maintenance. These include the:

- maintenance of property maps;
- assignment of unique land parcel identifiers;
- parcelization of records;
- separate access to title and boundary information; and
- timely updating of all records to ensure that information is kept current.

I. UNIFORM AND EFFICIENT SYSTEM OPERATION

The system user expects the Province to maintain a uniform land registration system in all offices. Some local discretion will exist. However, administrative and operating procedures must remain consistent across the Province.

Uniform operation requires education. Communication among system staff and between staff and users has always been at a high level and must continue to be emphasized. Formal instructions for using the system are required. Guidelines, checklists and procedural guides must be provided.

Some processes in the land registration system are slow and inefficient. Simple, more efficient procedures must be devised for:

- processing registrations;
- confirming boundaries;
- processing First Applications; and
- converting to any new system.

Ease and certainty of registration is required. Either single or multiple registrations should be dealt with quickly.

Title related problems and disputes will continue to arise. Settlement through the courts is expensive and time consuming. Methods of settlement involving less time and expense must be available.

A more effective utilization of trained staff must be made. Several technical activities should be handled by expert staff at regional centres or a centralized location.

It is impractical to staff the land registration system permanently with the complement necessary to handle peak workloads. Processes must be introduced to better distribute the workload. Customer service must not deteriorate to the level of operational breakdown.

If possible, the system must reduce the expense to the client. Land registration services are relatively inexpensive at present. However, the cost of long searches and determination of off-the-record claims must be reduced.

Simplification of the fee and tax collection activities is required. Many of the search transactions involve numerous small collections. This should be eliminated. More efficient collection procedures must be provided.

J. POTENTIAL FOR AUTOMATION

Potential for automation exists in most areas of the land registration system. The potential benefits of computer and mechanical assistance must be explored.

Increasing registration volumes result in a continuing need for more staff or higher productivity from available staff. A modest level of automation could result in lower clerical costs.

Only some system operations can be automated. Examination of documents and plans requires knowledgeable, experienced staff. Human judgement cannot be duplicated through automation.

The potential for automation is greatest for activities of a mainly routine, well-defined nature. The use of a microfilm system can speed up record filing and retrieval. Computers can be used for the entry, storage and retrieval of information abstracted from documents and plans.

Computers can be used to provide:

- regular activity reports for head office and other agencies;
- on-demand reports containing selected or aggregated information;
- efficient property map production and maintenance; and
- an immediate enquiry capability for indexes.

Computerized information is simple to manipulate and retrieve. Access to this information must be controlled to ensure its legitimate use.

K. ADEQUATE STAFFING, FACILITIES AND FUNDING

The Province must provide an effective and efficient land registration system. This requires adequate staff and operating funds.

Every possible efficiency must be utilized to keep staff increases to a minimum. However, inevitably, increased volumes require increased staff. Changes in methods and technology will require different staff skills. Training programs must be expanded.

Changes to the system will require changes in the operating environment. Several low volume offices should be closed. Adequate facilities must be provided in the remaining offices.

Many of the changes proposed will allow easier, faster access to information. Maps and records will be more complete and easier to obtain. This will reduce or eliminate the need for duplicate information maintained by other Provincial Ministries. Less duplication will result in reduced overall government spending. This alone may justify adequate funding of land registration system improvements.

All proposed improvements depend directly on the provision of adequate staff, funds and facilities. These must be available in order to proceed with any modernization of the land registration system.

L. SUMMARY

Throughout this Chapter we have discussed the major issues involved in land registration system improvement. The need for improvement has been shown. The following Chapters describe how these improvements are to be achieved.

Many proposed improvements require major changes in policy. Others are related to the level of service which must be provided. There is a logical sequence in which to examine improvements. Policy decisions will influence service options. Both will dictate the required system design. Analysis and recommendations must take this into account. Therefore, each potential improvement has been defined in this Report as being a:

- policy related consideration;
- service related consideration; or
- system related consideration.

These three areas are dealt with, in that order, in the next three Chapters of this report. The specific items to be considered in each area have been drawn from the discussion of major issues. They are shown in the following tables which serve as an index to the three Chapters referred to. Each item is discussed in detail in these Chapters.

Table 1

POLICY RELATED CONSIDERATIONS

- B. The Responsibility of Government in Land Registration
- C. Shorter Standardized Forms
- D. Affidavits and Personal Seals
- E. Covenants and Easements
- F. Improvements to the Land Titles System
- G. Improvements to the Registry System
- H. Title Assurance (or Affirmation)
- I. Boundary Assurance (or Affirmation)
- J. Adverse Possession in Land Titles
- K. Compensation
- L. Complete Title Record
- M. Complete Survey Record
- N. Unique Land Parcel Identification
- O. Comprehensive Property Mapping
- P. Use of Ontario Grid System Coordinates
- Q. Information Quality Controls
- R. Document Acceptance and Registration
- S. Centralized or Decentralized Information
- T. Parcelized Records
- U. Privacy
- V. Record Form and Retention
- W. Centralized or Decentralized Organization

Table 2

SERVICE RELATED CONSIDERATIONS

- B. Expense to the System User
- C. Uniform System Operation
- D. User Education
- E. Simplicity of Financial Arrangements
- F. Simplicity of Possible Future Conversion
- G. Speed of Examination and Approval Procedures
- H. Speed of Legal Processes
- I. Efficiency of Procedures for Multiple Registrations
- J. Improvement of Service on Peak Days
- K. The Waiting Time for Information
- L. Province-wide or Regional Search Capability
- M. Dynamic Property Mapping for all Properties
- N. Separate Access to Major Title Interests and Survey Information
- O. Currency of Title and Survey Records
- P. Availability of Historical Information
- Q. The Need for Personal Attendance
- R. Cross-referencing of Information
- S. Speed and Flexibility of Information Retrieval

Table 3

SYSTEM RELATED CONSIDERATIONS

- B. Improvement of the Legal Framework for Land Registration
- C. Functional Activities and Responsibilities
- D. The Processing of Plans
- E. Dynamic Property Maps and Unique Land Parcel Identifiers
- F. The Processing of Documents
- G. Storage and Retrieval of Documents and Plans
- H. Abstracting, Subsearching and Automation
- I. Information By-Products of the Improved System
- J. Local Office Systems and Procedures
- K. Regional Centre Systems and Procedures
- L. Central Systems and Procedures

VI

POLICY RELATED CONSIDERATIONS

A. INTRODUCTION

This Chapter deals with policy issues and alternatives. Decisions regarding policy matters shape the service and system features required for land registration. Requirements dictated by policy decisions must be satisfied before all other requirements. In most cases, policy decisions will limit the range of alternatives available for service and system improvements.

Thus, policy considerations must be the first area examined in defining the required land registration system improvements.

B. THE RESPONSIBILITY OF GOVERNMENT IN LAND REGISTRATION

In many American states, private insurance companies virtually operate the land registration system. Investigation of these jurisdictions has shown that costs are much higher and system safeguards are considerably less than in completely state-controlled systems.

The Province should retain overall responsibility for the land registration system. The Province is best able to establish fair rules and protect interests in land.

The Province currently operates two land registration systems. The Registry Act provides for a document recording system. The Land Titles Act provides for a registration of title, or modified Torrens system.

There are arguments in favour of each of these systems. The existing land titles system is generally seen as preferable for safeguarding land interests. The major advantages claimed for the system are the ease of searching title data, the security of a public guarantee of ownership and the need for a minimum of stored documentation.

Others prefer the registry system. Its ease of document registration is a major benefit. With properly maintained geographic indexing of documents, title searching could be made almost as simple as in the land titles system.

Either or both of the existing systems can be abandoned now in favour of a more ideal land registration system. Alternately, both systems can be improved substantially. The proposed improvements result in systems that are similar in most respects. The upheaval and expense of converting to another system at this time is avoided.

Proper comparison of the two improved systems requires information that is not currently available. Moreover, it will not be available until after improvements are made to both systems. Selection of a system can be justified only after it becomes clear that one is definitely superior to the other. At least in the short term, the Province should continue to maintain two systems.

The task for the remainder of this report is to define the improvements required to both registry and land titles systems. If, after improvements, one system proves clearly superior, all land in the Province can be brought under that system.

C. SHORTER STANDARDIZED FORMS

Shorter documents with standardized wording would benefit both users and system staff.

A significant portion of standardized clauses appearing in thousands of documents can be condensed. Expanding various statutes, such as The Short Forms of Mortgages Act, is required.

This simplification would result in:

- less time preparing documents for registration;
- less time checking documents for registration;
- less time required in the searching process;
- less time and material cost for microfilming;
- reduced storage requirements for document filing; and
- fewer pages and less cost for making copies.

For the most common documents, a prescribed form with standardized wording will be adequate. A simple process of filling in blanks should be available for the majority of conveyancing requirements. For some situations, standardized wording is not appropriate or possible. Therefore, non-standard documents and clauses must be accepted by the system.

Short input forms for all documents, similar to those used in Personal Property Security Registration (PPSR) are also required. All information necessary for abstracting should be transcribed on the form, which would replace the first page of the document. For some documents such as discharges of mortgage, the input form could serve as the short standardized form discussed above.

D. AFFIDAVITS AND PERSONAL SEALS

Affidavits are mainly intended to ensure the validity of information entering the land registration system. System users prepare and review them. System staff check them. They increase the workload and the amount of paper in the system. They do little to protect either the system or its users. They are a nuisance to honest users. They do little to deter dishonest ones. Several are designed to protect concepts that are outdated. Most should be abolished.

The affidavit of age purports to prove that a person is legally old enough to transfer land. Ultimately, it is probably ineffective. An infant who completes a false affidavit can likely later have the transfer set aside. Like any affidavit, it can also be forged. The affidavit should therefore be eliminated. A fairer disposition of all the rights involved is to limit the infant's recourse to an action against the purchaser from him. That would likely give him all the protection he requires and would protect the title of subsequent innocent purchasers.

The affidavit of subscribing witness is presumably meant to deter fraud and forgery. To honest users, it means more documentation to complete. To anyone bent on improper dealing, it simply means an additional signature to forge. The affidavit should be abolished.

A violation of the provision of The Mortmain and Charitable Uses Act no longer results in an unregistered forfeiture of title to the government. That Act now requires the registration of a notice. Accordingly, the affidavit of compliance (under The Registry Act) serves no function at all. The legislation should be amended to remove the requirement for one. The entire concept is outdated. If it is meant to raise revenue, the use of the extra-provincial licensing scheme for all the corporations affected should be investigated as an alternative.

The affidavit of compliance with The Planning Act also offers no real protection. A violation of the subdivision or part lot control provisions has a drastic effect. No title is conveyed to the purchaser. However, as long as the effect on title remains, the system and the lawyers will likely want to retain the affidavit as some evidence of compliance.

Instead, the effect on title should be removed and a monetary penalty imposed for non-compliance. If this is done, the affidavit is unnecessary.

The remaining common affidavits relate to tax legislation administered by the Ministry of Revenue. These comprise the affidavits of value of the consideration and of residence under The Land Transfer Tax Act and of exemption under The

Land Speculation Tax Act. It may be possible to incorporate some of the information in the document itself, but good conveyancing forms do not really lend themselves to this approach. These affidavits should instead be replaced by one short form (signed by both vendor and purchaser where necessary) containing all tax related information.

The need for personal seals is also an outdated concept. They date from an age when few people could write. The personal seal was used as an identifiable mark replacing the signature. The requirement is now a formality and should be eliminated.

The use of a corporate seal is a different matter. The corporate seal is the signature of the company and should be retained.

The requirement for personal seals should be abolished retroactively. The significance of a missing personal seal is minor. Retroactive abolition would resolve any problems.

E. COVENANTS AND EASEMENTS

Some areas of real property law would benefit from modification. They are not completely outdated. They just require improvement to satisfy user needs. The two primary areas that must be considered are:

- restrictive covenants; and
- easements.

The changes required would affect both the land titles and registry systems. These changes are purely legislative. There are no workload implications.

As a first step, The Land Titles Act must be amended to eliminate the confusion between conditions, restrictions and covenants. The present Act provides a limitation of 40 years if the term is not otherwise stated. This should be the maximum life of any restrictive covenant in either system. The original purpose of a restriction often becomes invalid in time. Permanent limitation on the use of land should be impossible.

Permitting some positive covenants to bind land must also be considered. Many negative covenants are simply positive covenants restated. Further research in this area is required. It is expected that this would indicate that some types of positive covenants are warranted.

Municipal zoning is a similar restriction relating to land. The zoning classification of each parcel should be shown on the title record as a number. Using this number, the searcher could then refer to an index having a full text of the relevant zoning by-law. Zoning information could also appear on property maps.

At present, some easements created by grant are effective without registration on title. The most important are those under Section 43 of The Power Commission Act. This complicates searching. All easements should be registered in order to be effective.

The law concerning the creation of easements and restrictive covenants should be changed to eliminate the requirement for a dominant tenement. This would avoid many of the annoying problems experienced in creating legitimate easements and covenants. It would allow easements in favour of persons and corporations who are not necessarily land owners. This would avoid certain fictions. For example, at present, Bell Canada easements are now phrased so as to appear to benefit their head office location.

F. IMPROVEMENTS TO THE LAND TITLES SYSTEM

A number of provisions of the current Land Titles Act should be clarified or revised. Specific areas for improvement relate to:

- cautions;
- notices; and
- leases.

A caution placed on title has the effect that no dealing with the land can be registered until the consent of the cautioner is obtained. The elimination of the entire concept should be considered. As a minimum, the use of a caution should be limited to cases where the interest being protected cannot be adequately secured by registering a notice. It is too powerful a device to allow its misuse. The Act should be amended to make it clear that a caution will only be allowed when required to protect a "proprietary interest"; that is, a present or future right to ownership.

A notice in the land titles system should be used to protect interests in land which are less substantial than cautions. Many interests in land do not involve a right to ownership. These non-proprietary interests can be adequately protected through the notice procedure.

Cautions should continue to be allowed if based on:

- an agreement of purchase and sale;
- the request of the registered owner; and
- the action of the land registrar, until an apparent error is corrected.

Cautions were, until recently, permitted in a variety of other circumstances. However, in line with present practice, the notice procedure should be used for:

- vendors' liens; and
- lodgements of title deeds.

These interests are primarily financial. The notice procedure provides adequate protection. Suspension of dealings with the land is not required.

An expiry date for each type of notice or caution should be imposed or selected by the party registering. Cautions registered by the owner or land registrar are usually for a limited short-term purpose. An effective period of one year is recommended.

A caution based on an agreement of purchase and sale should expire at the specified date of closing plus one year. The additional year is provided in the event that the cautioner wishes to commence litigation in regard to the parcel.

All other cautions should be valid for five years. Renewal for an additional five years should also be possible. This is the current rule for all cautions and should be continued except as noted.

Notices should also automatically expire at the end of their term. At present, there is no provision limiting the effective life of notices. If no specific expiry date is given in the notice, it should be valid for five years. The right of renewal for an additional five years should also apply.

The land owner must, as at present, be able to apply to the land registrar to have a notice or caution removed. This, of course, involves proof that the interest protected by the caution or notice no longer exists.

At present, any lease can be registered as a notice. If the remaining lease term is longer than twenty-one years, it can be registered as a leasehold parcel. Long term leasehold creates interests very close to ownership and is often dealt with in much the same way. The creation of a leasehold parcel record facilitates these dealings. It also gives the lease an assured status, as is done for ownership parcels.

All leases having a duration greater than twenty-one years should be registered as leasehold parcels. Leasehold title should be available, although not compulsory for leases having shorter terms. This gives a firm status as to ownership to subsequent transferees of the lease where it is needed or considered desirable. As at present, any lease longer than three years should be registered at least by way of notice to be effective against third parties. This provides notice of the lease to prospective purchasers.

G. IMPROVEMENTS TO THE REGISTRY SYSTEM

Major improvements can and should be made to the registry system. The effect of these improvements would be to:

- make title records easier to locate and use; and
- require fewer entries and documents to be examined.

These changes will also benefit the system. There will be fewer books and documents to handle and less time spent by users in the offices.

The specific areas requiring improvement relate to:

- the search period;
- discharges;
- expired interests; and
- certification.

The registry system is primarily a recording system. Searchers must ensure a proper chain of title and the validity of individual documents.

The Registry Act appears to require a forty-year search only. Lawyers rely on previous case law and usually go beyond the forty-year period.

As a minimum, the legislation should be amended to clarify that the required search period is limited to forty years or to the first independent conveyance before that, if none has been registered within the forty-year period. This would reduce the time for most searches and save considerable staff and user time.

As a second step, reducing the forty-year period would result in direct benefits to both users and land registration staff. However, drastic reduction could extinguish a significant number of interests that would otherwise continue to affect title. Users would have to be allowed to protect these interests by some form of additional registration. This could actually result in an increase in user and system workload. To avoid this, the forty-year rule could be retained for mortgages and grants of easement. However, selective reduction of the required search period for the majority of the interests (including ownership) should be possible. Further research is required to determine the specific period for each class of instrument.

Discharged interests present another problem. Currently, such interests are not deemed to be discharged immediately for search purposes. Mortgages and discharges of mortgage must be examined until ten years after registration of the discharge. For other interests such as mechanics' liens, the period is two years. This differs from the land titles system, where discharges are given effect on registration and entries relating to the interest are deleted from the title record.

The original purpose of the delay was to permit detection of fraud. However, fraud has not been a problem in either system.

Discharges should become effective on registration. All instruments affected by the discharge should be deleted when the discharge is abstracted. This should apply to all discharged interests.

Interests may also expire without requiring discharges. Leases and agreements are common examples of such interests.

When an instrument is registered with a specified expiry date, the date should be noted on the abstract index. With some instruments, the expiry date is difficult to find or to interpret. Therefore, documents should be accompanied by a signed statement specifying the expiry date if there is one.

Ideally, interests which have expired should be deleted at the time of expiry. This is difficult with the current abstract indexes. Therefore, as long as the system remains manual, the searcher should not be required to examine documents whose expiry date as noted on the abstract index has passed. In an automated system, automatic deletion of expired interests from the title record becomes feasible.

To further reduce the search time, the land registrar should be allowed to delete references to some other interests. He should be allowed to amend and update the record to delete mortgages not discharged ten years after the last payment was due, and to delete entries no longer effective as the result of a mortgage foreclosure.

Certification in the registry system under The Certification of Titles Act provides an assured statement of ownership and encumbrances at a stated point in time. It eliminates historical searching beyond the point of certification and can dramatically shorten the search period.

When combined with organization of the record on a land parcel basis, the search process can become almost as simple as that in the land titles system. Certification is currently required only for condominiums in the registry system.

Certification results in:

- shorter and easier searches;
- reduced staff workload in filing and retrieving; and
- reduced numbers of older records that must be retained in the office.

As a minimum, all new plans of subdivision in the registry system should be certified using the present legislation. This can be done by designating as certification areas all areas of the Province to which the land titles system has not been extended. New subdivisions would then be processed under the first application procedure in land titles areas and the certification procedure in areas where only the registry system is available.

Unfortunately, this would accomplish nothing for parcels previously registered in the registry system. However, most recent subdivision plans are of relatively high survey quality as a result of increasingly stringent examination procedures. Certification of these plans by the system as of the time of registration is possible. A statement of ownership at the time of registration and of encumbrances still outstanding at the time of certification should be provided. The likelihood of errors is small. Accordingly, the notice and objection procedure should be avoided. Payment of compensation for any losses would be greatly exceeded by the cost of using the present certification procedure.

This type of certification can be done quickly and cheaply. It will produce an immediate and noticeable reduction of user search time and staff workload.

To achieve maximum immediate effect, implementation of the program should start with recently registered plans and then work backwards.

Most of the improvements discussed reduce the number of documents the searcher must examine. Certification of subdivision plans also eliminates the need to search in the related unparcelized index books, which further reduces search time and system workload. However, the remaining index books normally involve the most difficult and time-consuming searches, since none of the information is organized on an ownership basis. To maximize the efficiency of the registry system, these books must also be parcelized. This can be done most effectively by obtaining the required information from users. The information can be used to combine parcelization with certification of these remaining parcels. In any transaction for which a complete title search is performed, the lawyer would be required to provide an opinion on title indicating the ownership and all current interests in the land. This would then be checked by the system staff and title certified accordingly.

Complete parcelization and certification using this procedure within an acceptable period of time is unlikely, if not impossible. Therefore, after the bulk of properties have been done using this approach, the system itself should handle the remainder. After perhaps ten years, the great majority of properties will have been dealt with and administrative completion of the parcelization and certification program will be both logical and feasible.

Without certification, the historical search effort in the registry system will remain the same. The more current certification is, the shorter the search period becomes. In order to minimize the search period, consideration should be given to some form of on-going certification process.

H. TITLE ASSURANCE (OR AFFIRMATION)

An affirmation is a government guaranteed statement of fact. In the land registration system, the value of an affirmation is that the searcher can rely, without question, on any affirmed statements. The search for title information can be short and conclusive where interests are affirmed.

There are three possible types of title affirmation:

- affirmation of proper completion;
- affirmation of proper execution; and
- affirmation of legal effectiveness.

Currently, the registry system offers no affirmations regarding title. Affirmation is not considered compatible with the philosophy of the system. Title records note the existence of all registered documents that could affect the land parcel. It is the obligation of the lawyer to determine the actual state of the title.

The existing land titles system does offer these levels of affirmation. This is required by the land titles philosophy of guaranteed title.

Lack of affirmations diminishes the usefulness of the system and promotes long searches and costly resolution of legal problems. As a minimum, both systems must affirm proper completion of documents. The system user must be able to rely on the fact that documents accepted for registration have been completed properly. Documents presented for registration are examined in both the land titles and registry systems. These checks are performed to ensure that certain formalities have been properly performed, and, therefore, that the document describing a relationship has been properly completed. This does not establish the validity of the relationship itself; only the documentary formalities are affirmed. The government, rather than a subsequent title searcher, should assume responsibility for proper completion of these documents.

Affirming proper execution makes the system liable for fraud, forgery and the identity and capacity of parties. Unfortunately, there are no effective system safeguards in this area and complete protection against improper dealings appears impossible. However, the land titles system currently provides protection against improper execution. This is considered a basic system responsibility, and must continue.

Improvements will make the system much easier to use. As a result, the incidence of fraud and forgery may increase. If that happens, system safeguards may have to be instituted. The suggested approach is to notify affected parties in both systems of any dealings with their interests in land. In the land titles system, parties would then be required to act within a specified time period to protect their rights to title or compensation. Thus, the affirmation would be effective only until the time period expires.

The philosophy of the registry system dictates that the detection of improper dealings should remain a user responsibility. Assurance of proper execution should not be given or compensation paid. However, the notice procedure will, at least, provide parties with a means of detecting improper dealings that was not available previously.

Affirmation of legal effectiveness is required by land titles system philosophy. It is an essential responsibility of the system to affirm ownership. Most tenancy and charge relationships should be included in this type of affirmation by providing comprehensive statutory formats to be used. Some situations would not fit into a legislative framework. Therefore, the use of these affirmed relationships should be optional.

The philosophical differences between the registry and land titles systems prohibit the offering of an affirmation of legal effectiveness in the registry system. The present indexing and registration procedures in that system would, in fact, make it impossible to offer this level of affirmation.

I. BOUNDARY ASSURANCE (OR AFFIRMATION)

There is a plan or written description of boundaries for each land parcel in the Province. Unfortunately, these descriptions, whether in the form of words or plans, are often inaccurate. They do not correspond to what exists on the ground. This situation is most prevalent in the registry system.

The land titles system provides assurance and compensation for differences between description and reality. If the description is so significantly different from the ground reality that it detracts seriously from the ownership, then

the government will provide compensation. This negative method of defining assurance causes some uncertainty. It would be useful to establish positive guidelines regarding boundary assurance.

Two levels of boundary affirmation have been considered:

- affirmation of precise location; and
- affirmation of useful existence.

In order to provide any level of affirmation, the land registration system must contain boundary descriptions which correspond closely to what exists on the ground. The accuracy of descriptions is dependent on the quality and origin of the survey evidence provided to the system.

Affirmation of precise location means that the land registration system contains a precise statement of where boundaries are located. Land owners who wish to go to the expense of monumenting and defining their properties accurately and completely should be able to obtain this affirmation from a court or special tribunal. Neighbours would be given notice of the intended boundary descriptions to be affirmed. They would be able to object before a judge or tribunal before affirmation. Since the affirmation is made by a court or tribunal, and is therefore equivalent to a statement of law, system assurance and the right to compensation are not relevant or necessary.

Affirmation of useful existence is the equivalent to what is provided in the current land titles system. It is a guarantee that the description of the property within the system corresponds approximately to its location on the ground. This should continue. In addition, the survey evidence available from recent subdivision plans in the registry system is of good quality. Wherever such survey evidence is acceptable, the affirmation of useful existence should also be offered in the registry system.

Where very poor boundary information is available, this level of affirmation cannot be offered. At least initially, many of the land parcels in the registry system must fall in this category. However, whenever a plan of acceptable quality from any source enters the system, affirmation of the useful existence of the property should be given. This would gradually reduce the number of properties for which no boundary affirmation can be made. Eventually all properties in the land registration system should receive, as a minimum, an affirmation of useful existence.

J. ADVERSE POSSESSION IN LAND TITLES

Adverse possession allows a person who is occupying land, but who is not the registered owner, to extinguish the rights of the owner by fulfilling certain conditions. The present land titles system does not allow rights to be acquired by adverse possession. This causes difficulties with both abandoned land and boundary encroachments.

When land in the land titles system is abandoned and the registered owner disappears, it is often impossible to deal with the title. No one can acquire title by possession. Also, most boundary monuments between adjoining parcels have long since disappeared or are invisible. Boundary encroachments have often occurred.

The purpose of not allowing adverse possession is to make the parcel register as accurate as possible. However, this interest deserves protection.

Adverse possession for abandoned land should be permitted under the following conditions:

- Present registered owners should not be deprived of their rights. Therefore, this change should not be made retroactive.
- The person in adverse possession should be required to register a notice of claim. Until the notice is registered, purchasers from the registered owner should not be subject to the squatter's claim. After registration of the notice, before any dealing with the land can take place, a hearing would be required to establish the rights of the parties. If a hearing establishes that the registered owner has lost his title, the squatter would then be registered as owner.

Adverse possession for boundary encroachments should also be allowed. Again, there should be no retroactivity. However, registration of a notice should not be required.

K. COMPENSATION

Errors will occur in any system. When land registration system records are incorrect, the government should provide compensation for any injured parties. There are three aspects of compensation which must be discussed:

- the basis for compensation;
- the amount of compensation; and
- the procedures for compensation.

The basis for compensation is equitable treatment of an injured party. A person may be wrongly deprived of land or some interest in land as a result of some error by the land registration system staff. Four types of errors can occur in the system:

- recording errors;
- acceptance of improperly completed documents;
- acceptance of improperly executed documents; and
- acceptance of legally ineffective documents.

Both the land titles and registry systems assume responsibility for correct recording. This should continue. Failure to make an entry, making of any entry against the wrong parcel and entry transcription errors are examples of system recording errors. Any of these could mislead the parties involved and loss could be suffered. Liability must result.

Improper completion of documents entering the system is less likely to cause problems. Both the land titles and registry system staff check documents presented for registration. Both systems should offer affirmation of proper completion. Compensation should be provided in either system for the few cases where loss is suffered as a result of this type of error.

The system has no effective means of detecting improper execution. This has not been a serious problem to date. In the event fraud and forgery become more common, the protective measure previously outlined should be considered. Affected parties would be notified of any dealings with their interests in land. In the land titles system, parties would then be entitled to compensation if they react to any error within a reasonable period. The registry system should remain responsible only for recording and not validity and, therefore, no compensation should be paid. The notification procedure will, however, provide users with a new means of detecting improper dealings.

Affirmation of legal effectiveness applies only to the land titles system. This should continue. The philosophy of the registry system is such that no compensation can or should be provided for ineffective dealings.

Errors may affect either title or boundary affirmation. The system should be liable for the affirmations which it provides. By providing affirmations of proper completion and useful existence in the registry system, the government should be committed to offering compensation for errors. This is not the case in the current registry system.

The amount of compensation currently available is inadequate in at least one circumstance. Compensation for claims relevant to mineral lands is currently limited in order to protect the government from unlimited liability. Instead, an upper limit on all individual claims should be established. The limit must be sufficiently high so that only the most extreme compensation amounts are excluded. Therefore, it is recommended that the upper limit on any one claim be three times the value of the surface rights alone.

The current Land Titles Act provides for a fund of money to be used as a source of compensation. This concept should be extended to the registry system. The amount remaining in the fund should not be the ceiling on compensation to be paid out. If the total of all claims ever exceeds the amount in the fund, the excess should be paid out of general government revenues.

The normal procedure for compensation should be to proceed first against any person responsible for the loss as at present. This can create real hardship when a defrauding party cannot be found or is judgement-proof. Therefore, there should be a provision allowing the administration to waive the necessity for a fruitless action. In the case of system errors, the procedure would be to proceed directly against the fund. In all other cases, the compensation fund should be used as a last resort.

L. COMPLETE TITLE RECORD

A complete title record would contain all information related to title of land parcels. This requires that all interests in land be registered to be effective. This benefits the system users since all required information would be available from the land registration system.

The discussion of a complete title record involves examination of the following areas:

- government liens;
- writs of execution;
- The Planning Act: and
- municipal clearances.

1. Government Liens

The more common government liens against land were created to enforce payment of tax. They do not have to be registered to be effective. Rather, each searcher must go to the agency collecting the tax to ensure that there is no lien outstanding.

The lien is against land because it is often the taxpayer's most valuable asset and cannot be moved. However, there are many possible liens and only the most common ones are now being searched. The lien agency only becomes aware of ownership when a purchaser enquires about the tax status of the property. Thus, there is no effective enforcement of the less common liens. It is suspected that some liens are not enforced at all due to lack of the appropriate government machinery. In effect, lien clearances are given without investigation by some government agencies.

There are two types of government liens:

- specific, against a particular parcel; and
- general, against all land the debtor owns and later acquires.

Since specific liens are against a particular parcel, they can and should be registered to be effective. There is one exception to this general rule. Municipal taxes are a lien which never disappears. As soon as one tax lien is discharged, another one is created. Registration makes no sense in this case and should not be required.

With the exception of corporations tax and succession duty, any remaining unregistered general government liens should be abolished. This does not prevent the government agencies concerned from carrying out their own functions. It simply means that any lien they wish to enforce must be made specific and registered against a particular land parcel.

The corporation tax lien should be retained. A corporate tax liability may arise on the sale of land. The lien is useful because it alerts the Corporations Tax Branch of the upcoming sale, since a search is conducted by the purchaser at this time. Two changes are required to make the procedure much simpler.

First, the current corporate owner should be required to obtain a consent from the Corporations Tax Branch before the land registration system will accept a transfer or grant. Second, application of the lien should be limited to only the current corporate owner. This means that the purchaser has no search to make. The Corporations Tax Branch has only one name to search and problems are resolved directly with the corporate owner.

Succession duty clearances are already required. The lien should apply only to duty levied after the death of the current owner. The necessity to search for clearances for former owners should be abolished.

With these improvements, there is no need to search for either corporations tax or succession duty clearances in either system.

2. Writs of Execution

Writs of execution are unregistered interests in land that cause users particular difficulties. They are recorded alphabetically by debtor name rather than against individual properties. This index is maintained in the sheriffs' offices and also in the land registry offices for the land titles system. There are a number of problems with this system. In most cases, it is impossible to locate the debtor's property in the land registration system. Therefore, the creditor must often wait until the debtor attempts to deal with the land to collect. Also, the writs file must be searched at the time of registration to ensure that the land is free of such debts. This can result in major problems on closing if the vendor has a name which is common to many debtors.

The problems are compounded since the writ is effective only within the jurisdiction of the sheriff in whose office it is filed. Therefore, to ensure collection against any land the debtor owns within the Province, the creditor would have to register in all sheriffs' and land titles offices.

Vendors having a name similar or identical to a judgement debtor usually have difficulty in dealing with land. They must prove that they are not the debtor before the purchaser will go through with the sale. This involves obtaining statutory declarations from the vendor or the creditor. This is a frustrating and time-consuming exercise. It is also unfair to most vendors. The chance of a vendor with a common name being the debtor in question is remote. The entire process simply complicates land dealings, does not serve creditors very well and inconveniences owners.

A number of improvements are possible with the writs of execution system. Automation of the search process in the larger sheriffs' offices would speed up response time and reduce staff requirements. This would speed up the search process but not solve the problems of owner identification. Writs would also remain unregistered interests.

A second alternative is to delay the binding effect of writs on land. This would permit execution searches to be made prior to the date of closing. It would, therefore, help prevent delays on closing and also reduce peak workloads in the sheriffs' and land registry offices. A creditor concerned about an immediate sale of the property by the debtor in the interim period and who knows its location could register the writ against the debtor's title. To further assist searchers, only

writs against current owners could be made binding in both systems. To complement this, sheriffs' certificates with respect to executions would be required for all deeds and transfers. As a result, historical searching for outstanding executions in the registry system would be eliminated. The file of writs in the land titles system could be eliminated at the same time. Writs would then be handled the same way in both systems, effecting a considerable saving of staff time in the land titles system.

Both of the above are potential short-term improvements. However, each solves only part of the problem. The recommended solution requires registration of all writs directly on title. Unregistered writs would be ineffective.

This solution becomes practicable with the creation of an automated index of owners' names and their holdings to allow creditors to locate the land owned by their debtors. Creditors can then register their writs of execution or take steps to sell the land immediately.

In cases where the judgement debtor does not currently own land, the creditor should be notified when someone with the debtor's name acquires property. In both cases, it would be the creditor's obligation to determine if the name provided by the system is, in fact, the specific judgement debtor. Once satisfied, the creditor can then take the steps necessary to register the writ on title or, of course, sell the land.

To be effective, the owner name index should be on a province-wide or regional basis. If organized on name only, many similar or identical names will be returned to the judgement creditor if the judgement debtor has a common name. To assist in identifying the specific judgement debtor, the index will have to include additional information. Full owner name, municipal address of property, last registered address of owner and owner's birthdate should, therefore, be required on all deeds and transfers.

These changes benefit the judgement creditor since it will be much easier to locate the debtor's property without waiting for a sale. The creditor can also be notified of any future property acquisitions. It benefits the conveyancing process since it will no longer be necessary to search a separate writs of execution file and obtain the required clearances at closing. Rather, the creditor is made responsible for identifying the debtor and attaching his specific property.

3. The Planning Act

Violation of the subdivision control provisions of The Planning Act makes a conveyance ineffective even in the land titles system. A historical search of adjoining lands as well as the particular parcel in question is, therefore, required in both systems. Searches of adjoining properties can be difficult or virtually impossible in either system.

Searching for Planning Act violations in the new land registration system must, if possible, be eliminated. As a minimum, the assurance of ownership in the land titles system could be made to override the effect of a violation. Affidavits would still be required to allow the system to maintain some control, but at least historical searching would be eliminated. Unfortunately, this would do nothing to solve the problem in the registry system. Requiring a consent for every land dealing would result in a huge increase in workload for the staff administering The Planning Act.

The recommended solution is to make violation a criminal offense subject to a substantial fine. Violation should have no effect on title in either the registry or the land titles system. All searches and affidavits for compliance with The Planning Act are, therefore, eliminated. The possibility of a substantial fine should be as effective a deterrent as the present system. However, it should be pointed out that the proposed amendments are outside the jurisdiction of this Ministry.

4. Municipal Clearances

Municipal zoning by-law violations can also result in unregistered interests. Lawyers have to repeatedly enquire from the municipality on each sale of a property whether there has been any violation of sidelot clearance and set-back by-laws.

A better procedure is needed. Municipalities should be required to register objections to new structures within three months of construction. Municipalities receive notice of construction through building permit applications. Violations can be detected shortly after completion of a structure. Registration of a notice of violation against a specific property would remove the need for repeated enquiries and municipal clearances where, in fact, no violation has occurred.

M. COMPLETE SURVEY RECORD

A complete survey record would contain all survey plans which are of some legal significance to property ownership and conveyancing. This requires that all survey plans dealing with location, extent and use of patented land parcels be recorded in the system.

System users benefit since all survey and boundary information would be available from the land registration system. It also benefits the system since more information is available to allow the construction and maintenance of accurate property maps and the affirmation of property boundaries.

The following areas must be discussed:

- the number of plans registered in the system;
- the method by which property boundaries are described;
- the need for survey field note information to allow re-establishment of boundaries shown on plans; and
- the mapping of properties in the system.

There are many types of survey plans and property maps. Only some are currently registered in the land registration system. Surveyors and others interested in the location and extent of properties must search in many places to assemble the required information. Information such as mortgage survey plans is in private files and may be difficult or impossible to locate or obtain.

To improve the completeness and quality of information in the land registration system, all relevant survey plans must be recorded and available to the system and its users.

Registration of survey plans allows accurate definition of the location and extent of properties. Plane coordinates for all property boundaries should be required as they provide an easy and precise way to record land parcel descriptions. They also allow automatic updating of property maps. Co-ordinates should be referenced to the Ontario Coordinate System where the control network is sufficient to provide the required accuracy. These areas should be designated integrated survey areas and coordinate usage made mandatory. This would allow simple and accurate determination of the relationships of properties on one plan to those on another.

Currently, most plans in the land registration system do not have these coordinates. Rather, they use reference ties to the historical township survey fabric. A program of relating the existing survey fabric to the Ontario Coordinate System

is required. This would allow land parcel descriptions to be referenced to the coordinate system. In that form, survey information would be of more use to the land registration system. The result would be a series of maps and plans in the system which would bear accurate and controllable relationships to each other.

A complete and accurate survey record for each property is essential to an efficient conveyancing process. Survey field notes contain the complete record of evidence and measurements used to physically locate or relocate boundaries on the ground. Sufficient field note information must be included on survey plans to allow the true ground relationships of boundaries to be transferred to property maps.

The location and extent of land parcels can best be shown on property maps. Interests such as easements are also most easily displayed in map form.

As a first step, the information and plans necessary to develop property maps must be accumulated and organized. The property maps can then be compiled showing the location, boundaries and adjoining relationships of parcels. Subsequent to this, topographical information and other physical features can be added. Map overlays can be used to reflect this additional information.

Cross indexes would be used to relate each land parcel to the plans which affect it and to the map on which it is displayed. This would allow surveyors and other users to quickly and easily locate the survey information they require without examining irrelevant title information. Segregation of title and survey information is considered essential to the efficient operation of the system.

N. UNIQUE LAND PARCEL IDENTIFICATION

The basic identifiable unit in a land registration system is the land parcel. All land parcels in the Province are identified in some way. Metes and bounds descriptions or references to lot and plan numbers are currently used.

Locating land parcel records in the current indexes can be difficult. The identification of one land parcel is sometimes similar or identical to that of others. This most often occurs where township lots have been divided without a subdivision plan. A "part of lot" description can cause errors in location and dealing with the property in question. Realignment of the political boundaries of the area served by a registration office sometimes also result in duplicated identifiers.

Confusion in identifying properties being dealt with is unacceptable. It increases the possibility of error for both system users and staff. Each parcel of land in the Province is unique on the ground. It must also be uniquely identified within the land registration system. This will mean that geographic or political boundaries can be realigned, offices closed or opened and new parcels created without the possibility of duplicated identifiers.

The unique parcel identifier should be a short, simple number, to allow efficient use by modern data processing equipment. It should be easily understood to facilitate its use by other government agencies and the user public in general. The selected identifier should also be flexible enough to accommodate changing conditions and technology.

The identifier should be in a form suitable for use as a description in legal documents dealing with land. It should also be cross-indexed to currently used identifiers in order to make it easy for users to relate documents already in the system to those entering the system at some future time.

The choices for a unique land parcel identifier are:

- a sequential or random numbering system;
- an hierarchical numbering system;
- a coordinate based numbering system (commonly referred to as geo-coding); and
- some combination of the above.

Sequential numbering systems are adequate for recording and retrieving files and records. However, they serve only the system's own needs and do not relate to common land identifiers or the identification systems of other users. They have no geographic significance and thus their utility to some users is extremely limited.

Hierarchical identification systems are currently the most commonly used method of land parcel identification. Most existing identifiers or descriptions in the land registration system are of an hierarchical nature. Municipality and subdivision lot and plan numbers are commonly used, easily understood example of hierarchical numbering systems.

Subdivision lot and plan numbers are used as identifiers for many of the properties in the system.

There are problems with using the subdivision plan and lot number as the system's unique land parcel identifier:

- not all properties in the Province are on subdivision plans;

- the lot and plan number have no geographic significance in terms of the lot's physical location on the ground;
- subdivision plans can be totally or partially annulled or superseded;
- subdivision lots can be divided into smaller parcels by metes and bounds descriptions or other survey plans; and
- the subdivision plan numbering series is currently unique only to a land titles or registry division.

Hierarchical boundaries are not necessarily permanent. This is particularly true when municipal or political boundaries are used. Frequent changes in hierarchical boundaries such as political boundaries necessitates corresponding changes in the identifiers and can be confusing. Only when the hierarchy is established and controlled by the system can these problems be overcome.

The primary unique parcel identifiers should be derived from an hierarchical numbering system based on arbitrarily assigned map block and parcel numbers.

Adoption of the map block/parcel numbers as the legal identifiers for all land parcels requires extension of property mapping to cover the remainder of the Province. This requirement for property mapping is discussed further in another section of this Chapter.

Hierarchical systems do not have geographical or mathematical interrelationships to each other. Conversion from one hierarchical system to another is impossible without a map for each system. For example, the relationship between map block/parcel numbers and municipality and street address numbers is not determinable without a map for each system. Relating land parcels to their geographic position and to each other in a hierarchical system is also difficult. This is a decided drawback.

A coordinate based system could provide a framework of identification numbers having both geographical and mathematical significance. Most coordinate systems have the advantages of permanency and adaptability. Many land registration system users, particularly other government agencies, would benefit from a geographically significant identifier. It would allow users to obtain land registration information by selected geographic area.

A coordinate based system does have drawbacks. Ground control stations necessary to accurately assign coordinates are not yet available in many parts of Ontario. Many users, particularly in the conveyancing community, are not familiar with

coordinate systems. Coordinate identifiers are lengthy. To be unique in the Province, at least a fifteen digit number would probably be required. When property maps are produced, the coordinates used may be approximate. When precise coordinates are recorded later, it may be found that the coordinates being used for the geocode define a point which lies outside the property. It is important to assign a unique identifier to the parcel at the beginning that will never change. If the point falls outside the property, the identifier would have to be changed. Thus, coordinate identifiers are unacceptable as primary legal identifiers.

A coordinate based numbering system should be used to provide a unique geocode identifier for internal system use. The coordinates should be assigned by system staff. This would allow provision of land registration information by selected geographic area.

The users should be able to use either the map block/parcel or coordinate identifier depending on their information needs. By also capturing the street address and owner's name, the system can organize and present land registration information in the manner most suitable for any of its users. Cross-referencing of these identifiers allows system information to be organized most effectively and efficiently. The system users can then obtain information using any identifier. Eventually, the registration system would contain all of the above identifiers. A relatively straight-forward conversion from map block/parcel number to any of the identifiers would be possible.

Regardless of the format and characteristics of the unique identifier selected, it must be assigned as soon as possible after new land parcels are recorded in an improved land registration system. Documents cannot be accepted until the property to which they refer has been assigned an identifier.

The mechanics of assigning and maintaining identifiers will be discussed in Chapter VIII.

O. COMPREHENSIVE PROPERTY MAPPING

Referencing land parcels to the geographic township, road allowance, concession and lot framework began with the original Crown grants and is the system in use today. However, over time, this basic framework for mapping and surveying has deteriorated. Many maps and survey plans exist in the current land registration system. However, there is no comprehensive, current series of property maps covering the entire Province.

Comprehensive maps are essential to an improved land registration system. Efficient operation of the system requires maps to assign land parcel identifiers. Maps are also necessary to locate and display parcels and their relationship to each other. Unfortunately, maps do not exist for many land parcels within the Province. This is unacceptable.

The land registration system must provide maps showing all registered land parcels in the Province. Survey plans existing within the system and maps produced by other agencies should be used for preparation of these comprehensive property maps. Not all properties appear on these maps and plans. The quality and accuracy of some maps and plans, such as many older survey plans, makes them unsuitable as property maps. The system must augment the usable maps and plans to ensure that all land parcels are illustrated.

To be of use, the maps must always reflect the existing situation. Therefore, they must be updated in some way to reflect all new land divisions as they are registered. This is necessary to assign identifiers to newly created land parcels. Since the identifier will serve as the legal description, it will not be possible to register documents until it has been assigned.

P. USE OF THE ONTARIO GRID SYSTEM COORDINATES

A coordinate-based land parcel identifier has geographic significance and is capable of mathematical manipulation. Most coordinate systems provide both permanence and adaptability. Many land registration system users, particularly other government agencies, have files based on coordinate identifiers. Use of coordinate identifiers in the land registration system will allow simple retrieval of all land-related data in the Province to suit the needs of these users.

In Ontario, a coordinate system has been established by legislation. This provides a common coordinate base for the entire Province. It provides a framework to which land parcels may be referenced on a local, regional or provincial level.

Ground control stations for the Ontario Coordinate System are being established. Utilization of the Ontario Coordinate System will allow the surveyor to establish new property boundaries and re-establish existing boundaries with a consistent degree of precision.

Each parcel of land in the Province should have coordinates referenced to the Ontario system calculated for its corners. Precise coordinates should be required on all plans entering the land registration system in areas where there is sufficient ground control. These areas should be designated as integrated survey areas. In areas where there is a lack of ground control stations, approximate coordinates should be used. These can be assigned by the staff from controlled aerial photographs as property maps are prepared.

The approximate coordinate value of the centre of each parcel (geo-centre) will be identified and assigned by land registration system staff. This number will be used as the unique geographic parcel identifier.

Q. INFORMATION QUALITY CONTROLS

The information contained in the land registration system must be accurate and reliable to be of use. This requires some form of examination, or quality control, of information as it enters the system. Furthermore, after registration, file integrity within the system is essential.

Information handling within the land registration system is a system consideration. The various methods of control, back-up and recovering relating to system errors will be covered in Chapter VIII, System Related Considerations.

The level of quality control to be exercised over input is directly related to the type of affirmation to be provided by the system. It is also related to the nature of information entering the system. The type of checking required for plans is therefore quite different from that required for documents.

Nearly all plans of survey entering the system are checked by Land Boundaries Program staff (for the land titles system) or by plan examiners (for the registry system). Registry system plans are examined only for compliance with technical requirements using checklists. Land titles system plans are examined for professional work quality as well. This, in combination with the varying level of experience of plan examiners, creates situations in which surveyors find that plans which are acceptable in one office or system are not accepted in another.

Earlier in this Chapter, it was recommended that both the registry and land titles systems offer an affirmation of useful existence. It follows that, if the level of assurance is to be identical in both systems, the quality of survey information must also be identical.

It is essential that all plans of survey be examined prior to recording in the land registration system. The level of examination should be uniform from office to office for both land titles and registry systems. The level of examination will be dependent on the type of plan and its intended use.

The level of quality control relating to documents is also a function of the affirmations to be provided by the system. Two levels of affirmation must be examined:

- affirmation of proper completion; and
- affirmation of legal effectiveness.

Affirmation of proper completion is to be offered by both the registry and land titles systems. This requires checking of input documents to determine that all required material is present and that it has been completed correctly.

This is, in fact, what is done today in both systems. Shorter documents, checklists, procedural guides and clearer legislation are required to simplify and speed up this process. With these improvements, input checking would be relatively simple and require little time.

The land titles system must also offer an affirmation of legal effectiveness. This requires examination of the title record and the content of documents rather than just their form and completeness. The areas to be checked are:

- nature of the transaction;
- title; and
- description of the land.

This involves two separate steps. First, the document itself must be reviewed and the nature of the transaction determined. For the document to be registrable, the transaction must be legally valid. This would normally be done as part of the review for proper completion and would also benefit from shorter documents, checklists, procedural guides and legislative clarification.

The other checks require inspection of the title record. Information contained in the title record must be compared to the information in the document. Conflicts must be noted and resolved before registration can be allowed.

This type of examination cannot be avoided if the system is to continue to offer an affirmation of legal effectiveness.

R. DOCUMENT ACCEPTANCE AND REGISTRATION

In the registry system, registration is effective from the time of acceptance of documents by the system. Registration in the land titles system is effective only when the appropriate entry in the parcel register is signed. Indeed, documents in the land titles system may be returned unregistered up to three weeks or more after they have been accepted at the counter, although this rarely occurs.

In both systems, documents are checked for proper completion at the counter. Payment of fees and assignment of registration numbers follows acceptance at this stage. In the land titles system an initial check for legal effectiveness is also made at this time.

The checking process in the land titles system creates significant delays in the processing of registrations. This causes considerable frustration for both system users and staff, especially on busy days. Also, there is no

assurance that registration will take place. This is of great concern in the conveyancing process. The financial arrangements are usually concluded when documents have been accepted. Certainty of registration and the opportunity to deal with any registration problem before closing are essential to the parties conducting the transaction.

Equally essential is the requirement that the system staff accept only effective documents for registration. The quality of information and the level of assurance provided by the system are entirely dependent upon accepting only legally effective documents. The system staff requires adequate time to check and, if necessary, refuse registration of incomplete or ineffective documents.

The system and its users have conflicting requirements. The staff requires time for checking. The user requires immediate registration. A compromise must be devised.

Documents could be accepted for registration without any checking. If a subsequent review determines that a document is incomplete, incorrect or ineffective, registration could be cancelled or the document could be registered subject to the defect. This provides a high degree of uncertainty for the system user. Current experience with the land titles system indicates that many documents contain at least some error or omission. Even if the system is made more simple to understand and use, this is likely to continue. The number of cancelled registrations would, as a result, be unacceptably high.

A more acceptable procedure should be made available. Users should be encouraged to submit complex documents for examination at least two weeks prior to the date on which registration is to occur. An examination for proper completion would take place at this time. The review for legal effectiveness could then be conducted by the system staff prior to the registration date selected by the user. This checking would be done behind the counter. This would dramatically relieve the problems encountered in attempting to deal with document examination at the counter on peak days. Users would be advised of problems at least a week before the proposed registration date and given an opportunity to resolve them. The element of uncertainty would be completely removed.

This procedure requires that complex documents be supplied to the system in advance of the desired registration date. Where a complex document is tendered within the two-week period, it should be registered on the proposed registration date if possible.

In cases where this is not possible, the document should be accepted, if properly completed. The examination for legal effectiveness should take place subsequently. Accordingly, the document may not be registered at all. If it is, registration should not be made retroactive to the time of acceptance, as in the present system.

Pre-approved documents should be registered automatically on the date selected if no other activity has occurred on title and the registrant had expressed his desire for automatic registration. If any activity has taken place, the user should be notified and given a choice of cancelling or proceeding with the registration. This should not be common. The staff workload involved should be minimal if the file of pending registrations is properly organized.

The pre-registration examination procedure should also be available for the more common land titles documents such as transfers, charges and cessations. However, these documents should be examined for both proper completion and legal effectiveness when tendered for registration. Subsequent cancellation should not be possible. Certainty of registration for complex documents requires pre-approval. Certainty of registration for normal transactions should be possible if the documents are tendered on the proposed registration date.

S. CENTRALIZED OR DE-CENTRALIZED INFORMATION

The principal services provided by the present land registration system are entirely de-centralized. Information on a land parcel is available only from the office which serves that area. This must continue.

Searches and registrations affecting individual land parcels will continue to be the major activities in the system. System users are located throughout the Province and the majority will wish to continue dealing with an office in their immediate vicinity. Centralizing or regionalizing all land registration system records would clearly not improve the level of service in most areas.

The question to be addressed is whether there should be some additional information available on a centralized or regionalized basis. This service does not exist in the current system. It should be provided in some instances.

There are two major reasons for introducing centralization or regionalization of some data:

- efficiency of processing; and
- availability of information.

Sophisticated and expensive equipment is required for micro-filming, computerized processing, automatic drafting and plan coordinate digitizing. Centralization or regionalization of these processes is required in order to justify the expense involved. Also, the skills necessary to perform these functions cannot realistically be provided at the local office level. To provide an adequate level of service in these areas, at least regionalization is required.

Both bulk users and judgement creditors could be better served with the availability of information on a province-wide or regional basis. Specifically, an owner name index cross-referenced to a provincial or regional file of land holdings is required. However, this information should be an addition to, and not a replacement of the information in the local office.

T. PARCELIZED RECORDS

The land registration system maintains three major sets of records:

- documents;
- plans; and
- index books.

Records are parcelized when all information relating to a particular land parcel is contained in one easily accessible place. Complete parcelization of land registration records would involve assembling originals or copies of all documents and survey plans affecting a land parcel, and maintaining a separate record for each parcel. The indexes would be organized on the same basis.

The existing document and plan files are not organized this way. Documents are filed sequentially. Plans are also filed sequentially by type. Some documents affect more than one property. Some plans affect many properties. Parcelization of the document and plan files is impractical. The workload and cost of doing the required copying cannot be justified. For example, a copy of a subdivision plan would have to be included in the parcel records for each lot shown on the plan and the results are not necessarily an improvement in service.

The parcel registers in the land titles system are maintained on a parcelized basis. Information relating to a parcel is grouped together on one page or series of pages. The organization of the abstract indexes in the registry system varies. Condominium indexes are, in effect, parcelized. Separate pages are maintained for each ownership unit. The same applies to plans of subdivision. However, unlike the land titles system, the parcelization is not continued to reflect further subdivisions that occur after registration of the condominium or subdivision plan.

The other registry system abstract indexes are not parcelized. A title search will usually require review of a number of pages containing unrelated entries and, perhaps, a number of index books.

The abstract indexes should be completely parcelized and this parcelization should be maintained to reflect subsequent changes in land parcel boundaries. To avoid confusion, title and survey information for the parcel should be separated. This would result in a "dynamic" title register and survey register.

The existing parcelized records in the land titles and registry systems correspond primarily to the title register. The survey register should contain a notation of every survey plan affecting a parcel. This information does not currently exist in a usable form. Where it does exist, it is intermixed with the title records. This prolongs searches for users such as surveyors who are often only interested in one type of information.

Having system staff convert the unparcelized index books to this new format would be prohibitively expensive. However, certification of all new plans entering the registry system would eliminate the need for an historical search in the unparcelized records for those areas. Administrative certification of recently registered plans would accomplish the same result. Parcelization of the remaining registry system records is dependent upon the development of property maps. As these property maps become available, parcelization and certification of the remaining properties should proceed. The recommended procedure for this work has already been outlined in Section G, Improvements to the Registry System.

As new documents or new survey plans enter the land registration system, they would be noted in the title register or survey register for each land parcel which they affect. The survey register in both systems would contain a complete historic record. The parcelized title register in the registry system would contain an historic record from the date of certification. The title register in the land titles system need only contain the currently active entries.

U. PRIVACY

Information privacy is a topic of current concern. It becomes a major issue in the light of possible improvements to the land registration system, particularly computerization.

The current land registration system is completely public. However, it is not frequently used to obtain information unless the searcher has a direct interest in property. Few people are sufficiently familiar with the system to be able to obtain information. Bulk information is difficult to obtain even for those familiar with the system.

Improvements to the system will make it easier to use. If automated, information on property holdings or dealings can be obtained easily and quickly. Questionable use of the system's information might be possible. This could be considered by some to be an invasion of privacy or abuse of the system's capability.

Historically, the system has permitted unrestricted access to individual records. The majority of the information within the system is not of a "sensitive" nature. There is no reason for restricting access to individual land parcel information. The system should remain public and open with respect to individual records.

Aggregate or selective information has not been readily available from the system to date. This is considered a major limitation. System users having a legitimate requirement for aggregate information have not been satisfied. The ability to obtain this type of information is considered essential.

The problem is to limit access to this type of data to legitimate users. System safeguards must be provided to limit access to this information. Requests for information must be judged individually and authorized only if considered a legitimate use of the system.

V. RECORD FORM AND RETENTION

The present system accepts original paper documents and plans for registration. The pertinent information in a document or plan is located and entered in the parcel registers and abstract indexes. The original is then micro-filmed and filed for subsequent retrieval when requested during the search process. The microfilm is used only for security (except in the Toronto and York South office).

Copies of most plans are provided to system users. The original plans, from which copies are made, remain with the system staff. However, both books and original documents are given directly to the public. Usually, the books are the only existing record. Duplicate books do not exist for back-up security. Replacement of information from most documents is possible because they have been microfilmed or recorded in "copy books".

In general, system safeguards against alteration, loss or theft of records are inadequate. Constant use of the originals eventually leads to their deterioration. Reconstruction of lost or destroyed records is difficult if not impossible.

Most of the original documents and plans are bulky. This contributes to the storage space required in the office. Paper documents are generally lengthy. This increases the amount of time required for examination and abstracting on input and review during searching.

All these problems can, and must, be resolved.

As a first step, documents presented for registration should include a first page in a form setting out all pertinent information required for abstracting. This should follow a standardized format and replace the first page of present documents. This "cover page" would form part of the document. Its design would be integrated with the design of shorter documents. It would define the intent of the document and serve as an application to amend the record. The remainder of the document would provide the supporting detail to justify the application for amendment. For some documents such as discharges, the cover page could serve as the document. After examination and microfilming, the original document would, at the user's option, be returned or destroyed.

This will dramatically reduce the amount of paper which must be stored in the land registration system. Also, the information contained in the document cover page can be designed to correspond directly to the entry required in the parcel register or abstract index. Abstracting would be greatly simplified. The entry would represent the intent of the registrant. It should therefore reduce or eliminate the risk of staff judgement errors in the abstracting process.

The cover page form and all pages of the document submitted should be microfilmed as well as all plans. A system user requesting a document or plan should receive a copy of the microfilm record. This reduces the possibility of alteration, loss or theft of system records. The security of the system will be greatly improved. The methods and media for storing microfilm and producing copies are systems considerations. They will be discussed further in Chapter VIII.

As with documents and plans, only copies of the books should be provided. Index book information for documents will be taken directly from the document cover page. Once the document is registered, this information must govern. Assurance of legal effectiveness and proper completion must be based on this information. The system user would remain responsible for examining the remainder of the document for details of the arrangement and this information would continue to govern between the parties to the document themselves. But, if any conflict arises, the document cover page should prevail, since it will be taken to represent the intent of the parties. This requires that it should be signed by the parties or their lawyers.

Any new information entering the system would be filed in microfilm form. Original documents or plans would no longer be stored. However, the paper documents and plans currently stored in the system also pose storage, filing and retrieval problems. A program is in place to complete the microfilming of all stored documents. This program should be accelerated and expanded to include all plans.

As microfilming of documents and plans is completed, the microfilm record should be used to provide copies to users as described above. Once filmed, the documents existing in the system should be destroyed, if possible. If a retention period is considered necessary, they should be removed from the offices and stored in an archival file.

Once the program of backlog microfilming is complete, each office would operate using microfilm copies of documents almost exclusively. The storage and use of paper documents would only be necessary for the period of time required to create the microfilm records. Security of system records would be acceptable since only copies of documents, plans and books would be provided to the system users.

W. CENTRALIZED OR DE-CENTRALIZED ORGANIZATION

The land registration system is primarily a decentralized organization. Two Regional Property Registration Branches provide head office administrative planning and operational management. Sixty-five local offices perform the majority of land registration functions. Head office support of a specialized professional nature is also available from both the Land Boundaries Program and Property Law Program.

Currently, sixty-five offices are operated throughout the Province. Many of these are small offices processing fewer than 10,000 registrations per year. In these smaller offices operating costs often exceed the revenue taken in. Their existence is difficult to justify based on volume alone. Some consolidation of local offices could improve system efficiency and reduce overall operating costs.

After consolidation, the majority of local offices will be self-sufficient in their day-to-day operations. However, specialized service requests will continue. The expertise required to handle these special requests may not be available in all offices. Indeed, it is not practical to ensure that each office is permanently staffed with the skills necessary to handle all situations.

Establishment of offices designated as regional centres performing these services for a group of offices would be more effective. This could involve some regionalization of both present head office and local functions. Concentrating some functions in regional centres should provide a sufficient volume of work to justify full time specialists. The required staff could be assembled and given the in-depth training necessary to perform these functions most effectively. The Land Boundaries and Property Law Programs would continue to function as a head office professional staff support group. Their responsibilities would include:

- developing training programs;
- preparing procedural guides;
- assisting in determining policy;
- providing quality control procedures and inspection;
- setting standards;
- holding hearings; and
- resolving complex legal and survey problems.

VII

SERVICE RELATED CONSIDERATIONS

A. INTRODUCTION

The previous Chapter defined the policy related considerations for improving the land registration system. This Chapter outlines the service related requirements.

Some policy decisions directly affect the service to be offered to the system users. Others do not. In either case, the services offered must conform to desired policies.

As in the previous Chapter, service related considerations will be discussed in terms of specific features which the system must offer to its users. System options will be selected in terms of their ability to support these defined requirements.

B. EXPENSE TO THE SYSTEM USER

There are three major elements of cost for system users which can be related to the land registration system:

- payment of taxes associated with land transfers;
- payment of fees for registration and search activities; and
- the cost of the time spent searching both inside and outside the land registry office.

Tax collection is performed by the land registration system but tax policy is set by the Ministry of Revenue. Changes to the land registration system will not affect the amount of tax collected significantly.

Reduction of operating costs is possible. This will at least allow fees to remain low.

The major area for realizing potential savings is in minimizing the professional time required for dealing with the land registration system. Reduction of professional time can occur in two important areas:

- searching; and
- registration.

Search time can be reduced by:

- making all required property related information available from the land registration system;
- eliminating the need for searches outside the land registry office;
- reducing the required search period in the registry system to a minimum;
- providing property maps and unique identifiers to simplify location of the required information;
- providing parcelized information to ensure easy access to the required records; and
- providing selective and aggregate information quickly and at a reasonable cost.

The time required for registration can also be reduced by:

- the use of short standardized input forms; and
- providing for the submission of complex documents for review prior to the registration date.

All the above have been discussed and recommended as policy in the previous Chapter. Each has been justified in its own right. Together, these changes will serve to minimize the expense to the system user.

C. UNIFORM SYSTEM OPERATION

Land registration services should continue to be offered in many offices throughout the Province. Provision of all services through one centralized operation or a few large regional offices is considered impractical. However, expecting system users to deal with different rules in different offices is unacceptable.

The system user must be able to deal with the land registration system in the same way at any office. Documents and plans in a form acceptable in one office should be acceptable anywhere in the Province. Information obtained from the system should be of equally high quality in all offices.

This has two implications for the design of the system. First, a uniformly high quality of information and service must be provided across the Province. Not all offices have a sufficient volume of business to justify maintaining the expertise required to deal with uncommon situations and to provide some complex services. Maintaining uniform quality

control in all offices requires regionalization or centralization of some procedures. Examination by expert staff in regional centres or a central site will ensure a high level of quality for information entering all offices.

The size, location and registration volume of an office will also influence the type of equipment which can be justified. Equipment may vary from office to office but the services and products available must be the same at any location at the same cost to the user.

To provide uniform quality of system operation across the Province, detailed operational procedures must be made available and training programs expanded. Prior to implementation, land registration system improvements must be fully documented, office staff trained and system users educated. Centralized and regional monitoring and staff training programs will be required to ensure uniform system operation on an on-going basis.

D. USER EDUCATION

User education through the provision of procedural guides and user manuals is essential. The implementation of improvements will result in significant changes in land registration system procedures. Thorough education of the user is essential if this change process is to be carried out effectively.

Detailed procedural guides are the only effective method of providing system users with the information required to deal with complex land registration requirements. They are also essential to maintain a satisfactory uniform system in a decentralized organization.

This will benefit the user in several ways. It should shorten the time required for document preparation considerably. It will also greatly reduce the chance of document rejection at the time of registration. Minimizing the very serious legal and cost consequences of document rejection is an important objective.

Promoting the use of educational material will also benefit the system. It should improve the quality of information entering the system since there should be fewer mistakes in the documents. Input examination will be more efficient and fewer registration delays will occur. Delays caused by disputes on peak registration days are a particular concern in the current system.

E. SIMPLICITY OF FINANCIAL ARRANGEMENTS

The present land registration system operates on a cash basis. For many users this is satisfactory. For others, it is an inconvenience. For the system, it means having to handle a large number of small value transactions each day.

Financial arrangements should be simplified. All government agencies (federal, provincial and municipal) should be allowed to operate on credit accounts during the month and provided with a statement owing at month-end. Deposit accounts for private agencies and other regular system users should be tested.

Occasional system users and those electing not to establish deposit or credit accounts would continue to pay cash as services are performed.

Deposit and credit accounts should speed up cashier service and simplify accounting procedures. Automated cash control and accounting distribution capability should be provided in each office. This will:

- simplify the handling of deposit and credit accounts;
- provide automatic reporting of tax collection to the Ministry of Revenue;
- provide automatic statistical reporting for head office;
- provide a highly controlled audit trail;
- allow capturing of required information when registration fees are collected; and
- assist in budget preparation and annual reporting.

F. SIMPLICITY OF POSSIBLE FUTURE CONVERSION

Two registration systems currently exist in the Province. Converting to a third system poses immense problems in terms of people, confusion and cost. However, a conversion at some future date must be considered.

During conversion, normal services cannot be suspended. Implementation of changes must take place quickly. Gradual revision of the files and records is impractical. Instead, the information to be provided for the new land registration system must be available at the time of conversion. This will allow changes to be made efficiently.

Improvements to the existing systems and the information collected during this stage must be capable of incorporation in any new system selected. There are two areas most likely to be affected. The flexibility for conversion to a new system must be a factor in selecting:

- the methods of organizing records in each office; and
- the methods of indexing information.

Improvements affecting the office records are:

- preparation of comprehensive property maps;
- assignment of unique land parcel identifiers;
- construction of parcelized indexes;
- provision of separate access to title and survey information;
- microfilming of all office records; and
- provision of copies rather than original documents.

Total implementation of these improvements will be a relatively gradual process. An important aspect of conversion relates to the ways in which records are indexed. Total reorganization of the present index books would be exceedingly difficult. However, by capturing the abstract entry information on a computer, indexing can become automated and highly flexible. The simplified input form will contain all information required for the abstracting process. It will also contain the owner's name and other information required for cross-referencing. Entry of this information into a computer will provide the flexibility to deal with many of the current problems and will greatly assist any future conversion effort.

G. SPEED OF EXAMINATION AND APPROVAL PROCEDURES

Both documents and plans must be checked and approved before being accepted for registration.

The document examination process can be improved considerably. The elimination of some affidavits combined with the use of some short standardized documents and a standard "cover page" input form would eliminate some of the complexity of document review at the counter. Counter review should continue. As a minimum, a review for proper completion of the documents should take place. However, the time required for this review would be minimized by the improvements outlined above.

The most time-consuming activity in document review is the examination for legal effectiveness in the land titles system. This requires retrieval and inspection of the title record. To speed up examination and approval at the counter, users should be encouraged to submit complex documents prior to the registration date. A behind-the-counter pre-approval procedure will assist in levelling out peak day activity. It will eliminate inconvenience at registration time and provide certainty of registration on the required day. This is a major benefit. The possibility of subsequent registration cancellation is avoided. It would also allow the more common standard documents to be dealt with quickly. These should be registered on the same day they are tendered. Subsequent cancellation should not be allowed.

Plan examination is not normally a counter activity. Many plans affect more than one land parcel and examination is therefore often time-consuming. For some plans, a field examination is performed to verify the information on the plan.

Nevertheless, plan examination and approval must be streamlined. To do this and to provide an acceptable level of quality control requires a sufficient number of well-trained plan examiners. The required skills can be made available at the local offices for most levels of plan examination. Complex examinations should take place at regional centres or a central site, where the volume justifies professionals. However, as a general rule, providing a proper level of service to users will require that plan examination remain a local office function.

H. SPEED OF LEGAL PROCESSES

Improvements to the routine registration and search processes have been previously discussed. Faster checking and shorter, simpler searches will significantly improve the service for routine activities in the office.

However, some more complex services are also provided by the present system. Improvements in these areas must also be addressed.

These non-routine processes generally involve considerable work in the following areas:

- examination and requisition;
- notice and objection; and
- hearing and appeal.

Parcelization of the title records in the registry system and streamlined plan examination procedures will simplify the examination and requisition process. The notice and objection procedure requires notification of the parties affected by a process. The name and address of the land owners should be available from an automated cross-reference index. Therefore, the time and work required to issue notices should be considerably reduced.

The hearing and appeal process is designed to protect the rights of individual land owners. It must remain in the event of dispute. However, The Boundaries Act requires a hearing even if no objections are received to a proposed confirmation of boundaries. This requirement should be eliminated.

These changes will provide faster legal processes for most non-routine land registration activities. However, each of the major non-routine activities must also be considered to identify other improvements which should be made. The activities are:

- First Applications;
- Applications for Certificate of Title;
- Boundary confirmation;
- Registrar's Abstracts; and
- Registrar's Compiled Plans.

The present First Application procedure has already been streamlined considerably. There is little more that could be done. The one major remaining possibility would be to drop the approval function of the Property Law Program. The local office or regional centre would be responsible for the complete processing of First Applications. Some small overall time-saving may then be possible. However, for massive conversion, a whole new approach will be necessary. Mass conversion will be feasible only if users are made responsible for providing the required information in a form suitable for rapid system processing. Further, the notice procedure would have to be significantly streamlined or even eliminated.

The present Certification of Titles procedures could be streamlined by removing the requirement for a registrar's abstract. Again, having all the work performed in a local office or a regional centre could result in slightly faster processing. Presently the Property Law Program is completely responsible for this activity.

Boundary confirmation could be speeded up by allowing the surveyor to establish the line to the satisfaction of all concerned parties, including the Land Boundaries Program. Agreement would remove the requirement for holding a hearing. In cases where objections are raised, the normal administrative hearing process would apply.

Registrars' abstracts require much staff time and expertise. With parcelization of title records, a certified copy of the abstract index would serve the same purpose. This should replace the registrar's abstract. Certified copies would be available immediately from the office records. This would avoid the long delays sometimes experienced in obtaining registrar's abstracts.

Registrar's Compiled Plans also require a great deal of time and skill to prepare. These could be replaced by up-to-date property maps available immediately from the system. Using automated processes, property maps to the required scale and level of detail could be produced quickly and inexpensively at the request of the system user.

I. EFFICIENCY OF PROCEDURES FOR MULTIPLE REGISTRATIONS

There are two types of multiple registrations. A single document or plan may affect a large number of parcels. A large number of virtually identical documents, such as condominium mortgages, may be presented for registration at one time.

In both cases, the registration process is time-consuming. Much of this is unavoidable. Both types require examination and involve judgement. However, some time savings are possible.

Implementation of the pre-approval procedure would even out the workload involved in document examination and reduce the problem of dealing with multiple registrations on peak days. Automation of the abstracting process would allow title entries to be made rapidly and efficiently.

One other change would allow very efficient registration in certain situations in the present land titles system. A single index of all registrations affecting more than one parcel on a plan could be used. This would be much like the "common elements and general index" for condominiums. This eliminates the work involved in making many manual entries in a paper system.

J. IMPROVEMENT OF SERVICE ON PEAK DAYS

Registration activity will always be greater on some days during the year. Closings at month-end and mid-month as leases expire and at certain times during the school year result in predictable variations in registration activity.

The land registration system must respond to peak day activity. It cannot control the number of registrations on these days. It must at least provide a satisfactory service level for system users.

The majority of problems involve delays at the front counter, particularly in the land titles system. Faster checking at the front counter and pre-approval of complex documents will reduce counter service time. The availability of complete title and survey index records on a parcelized basis reduces both search and subsearch time.

Providing a high level of service on peak days will remain a problem. However, intelligent use of the above features will allow the system user to conduct his business quickly and efficiently even under the most adverse conditions.

K. THE WAITING TIME FOR INFORMATION

There are two situations where the system user must wait for information. First, he must wait until a counter clerk is available and can provide the book or document required. Second, he must wait until a book or document is returned if it is already in use by another party.

Waiting for counter service can be reduced by providing more counter service positions and by reducing the amount of time required to serve each person in line. Both should be possible with an improved system.

Establishing additional counter positions requires staff flexibility. Staff moved from another duty must also be trained to handle counter activities. This is practical when counter procedures are simplified and search processes are standardized. It would be difficult to provide this level of service in smaller offices, but delays are not often a serious problem in these offices.

Reduction of the time taken to serve each customer is dependent upon both simple procedures and better trained staff. A more efficient response to customer problems will result in less time required per customer.

The time wasted waiting for return of a document or book in use can be avoided if multiple copies are available. For this reason and to provide system security, original documents and books should not be supplied to system users.

The proposed system improvements will have the effect of minimizing the waiting time for information. The pre-approval procedure means fewer people will be in the office on traditionally busy days. Therefore, with the same staff, the ratio of staff to user improves. A complete title and survey record reduces the number of separate searches a user must make. Parcelized index records, unique identifiers and a microfilm document file reduce the amount of staff time required to locate and provide information. Deposit accounts and other improved financial arrangements reduce the time spent at the cash register.

L. PROVINCE-WIDE OR REGIONAL SEARCH CAPABILITY

A province-wide search capability exists in theory. The records of the land registry offices are open to the general public. Any member of the public can request by mail the title record for and the documents affecting any land parcel. In practice, however, the process of obtaining the required information is so cumbersome and costly that personal attendance is practically obligatory, particularly in the registry system. There is no simple-to-use centralized or regionalized search capability.

The major need is for a regional or central land owner name index. This should be provided if creditors are required to file writs of execution directly against land. The index would allow creditors to identify owners and locate their land.

A province-wide or regional search capability would allow maximum use of geographic identifiers. This would make it possible to obtain selected information about all properties located within points described by the geographic identifiers automatically.

M. DYNAMIC PROPERTY MAPPING FOR ALL PROPERTIES

Property maps illustrate the location, extent and relationship of land parcels. They are essential for assignment of unique land parcel identifiers. They form the foundation of a modern land data base.

The style and format for property maps must satisfy user needs. They must also be provided at reasonable cost.

All registered properties must be shown on the maps. The usefulness of the map is reduced if properties are omitted or the map becomes outdated.

This also means that new properties must be added to the maps as they come into existence. In that sense, the maps must be "dynamic".

For property mapping purposes, nearly 100,000 new properties are created each year in the Province. Property maps must reflect these changes as soon as they occur. This requires a continuous updating process.

The property maps should be capable of showing more than just the location and extent of a property. The format used should provide the capability of showing other information. This would include:

- basic topographical or planimetric information;
- physical features;
- property identifiers;
- zoning and other land use restrictions;
- political boundaries;
- statistical information; and
- ownership information.

This information could be shown on map overlays rather than on the property map itself. Map overlays could also be used to allow system users to choose the combination of information to be presented on a map specifically for their purposes. A municipality, for example, could then use the land registration system property maps as a basis for preparing a zoning plan.

There is a need for rapid creation of a new property map once a large number of changes have been registered. As shown in Chapter VIII, Section E, to accomplish this efficiently requires an automated mapping process. Superseded versions of the map would be retired and recorded as historical information. As new and more precise information becomes available, it should be entered into the system. This will gradually upgrade the accuracy of the map.

N. SEPARATE ACCESS TO MAJOR TITLE INTERESTS AND SURVEY INFORMATION

Land registration information serves different purposes for different users. While complete title and survey information is required, it should be possible to access various title and survey interests separately. This avoids confusion and unnecessary work for the system user interested only in specific information and at the same time allows all information for the land parcel to be easily retrieved.

The most important requirement is to allow separate access to title and survey information. The title information would also be more useful if separate access were provided for:

- leasehold and freehold; and
- surface rights and mining rights.

Similarly, for survey information separate access capability is required for:

- the survey plan files;
- the boundary register;
- property maps; and
- parcel identifiers.

O. CURRENCY OF TITLE AND SURVEY RECORDS

Ideally, the information provided by the land registration system should be current at all times. The effect of a registration should be immediately noted in all of the system records affected.

Survey plans are normally submitted to the system for approval well before registration. As part of the approval process, the information contained in the plan can be entered into the system subject to subsequent correction. Thus, the information contained in the plan can be available and the necessary records updated on a provisional basis before or at the time the plan is registered. In essence, the updated survey information exists and can be supplied to the office prior to actual registration of the plan.

A similar situation does not exist in the case of the title records. Updating the index books does not occur until the document is abstracted. A short notation in the fee book (and a pencil entry in the land titles parcel register) is used to provide notice of the change to the index book until the required entry can be made.

Depending upon office activity, even notation in the fee book can lag somewhat behind actual registration. Anyone interested in the current state of the title must then examine the index book, perform a subsearch in the fee book and examine any documents not yet entered in the fee book.

This problem can be overcome. Entry in the parcelized index will still lag behind registration activity by the amount of time necessary to perform abstracting and to make the information available in the office. However, introduction of a

cover page as an application to amend the record will allow immediate updating of the subsearch file. Since all information necessary for abstracting is available on the cover page, copies of the cover pages can provide a complete subsearch file immediately upon registration. A registration against a parcel could also be recorded immediately by using a sophisticated cash register. An enquiry pad would then allow an automated, immediate subsearch. Therefore, automation of certain office functions will result in simple and completely current subsearching capability.

P. AVAILABILITY OF HISTORICAL INFORMATION

System users require both current and historical information. The surveyor must sometimes search back to the original patent of a township lot for survey information, in both the registry and land titles systems. Various organizations or individuals are interested in determining previous ownership. This means that all information and not just that required for a lawyer's normal title search must be preserved in both systems.

Storing historical information in an archival file remote from the office would probably satisfy the needs of most of these users. Microfilm document and plan systems would allow efficient storage and retrieval of historical information in the office. However, historical searching should be reduced or eliminated where possible. Much of the historical searching for survey information can be reduced or eliminated by confirming boundaries and showing easements, rights of way, utilities and roads on property maps.

The development of comprehensive property maps will take considerable time. Many land parcels will likely never have their boundaries confirmed. Historical survey information is often necessary to resolve problems of conflicting survey boundaries and adverse possession. Accordingly, this information must remain available for the surveyor.

Q. THE NEED FOR PERSONAL ATTENDANCE

Personal attendance of the system user at the land registry office is the rule for both searching and registration in the present land registration system.

There are two ways in which the need for personal attendance can be minimized. The first is to allow the system user to complete his business in the office in less time. The second is to allow the user to obtain information without coming to the office. Improvements to allow him to complete his business in less time have already been discussed.

Obtaining information without personal attendance at the land registry office requires telephone and mail service.

Telephone service could take two forms. First, the system user must be able to call to request a copy of the information in the system. Once the copy is produced, it could be mailed or left for pick up.

A second type of service should be considered only if sufficient user need is demonstrated. This involves an immediate verbal response regarding the information in the system. Here, the local office staff would be required to inspect the system records and immediately provide the information required by the system user. This type of service is recommended only for specific enquiries concerning information in the index records. No assurance can be provided regarding information given verbally over the telephone. Retrieving, inspecting and providing information about documents would be both time-consuming and prone to error. Therefore, this service should be limited to providing information obtainable from the indexes only. This should be considered only a possible future service of the system.

Mail service for registration and search activities should be promoted. Use of the telephone service to identify specific documents or other records required for searching would allow the system user to obtain the information by mail or pick up. Registration by mail should be encouraged through the pre-approval procedure.

In order for a user to take advantage of a mail-in service, sufficient funds should be enclosed with the application or available on deposit. An excess of funds should be credited to the deposit account. Insufficient funds should prevent registration.

R. CROSS-REFERENCING OF INFORMATION

Cross-referencing of information allows the system user to obtain information from the system using various identifiers.

Information in the land registration system will be organized primarily by land parcel identifier. The system user must be able to determine the land parcel identifier using the current legal description, street address or owner name. This requires cross-reference indexes to relate these external identifiers to the unique parcel identifier used within the system.

With cross-referencing, external and internal identifiers need not be the same. The internal land parcel identifier can be chosen on the basis of the most efficient way of organizing the system records. Using the cross-reference

indexes will allow automatic association of the external reference to the internal system identifier.

Cross-reference indexes are required for:

- registered owner identification; and
- land parcel identification.

The land owner identification index is necessary to link owner names to land holdings. This index would be used primarily by judgement creditors to identify the land owned by judgement debtors. Since many land owners have similar names, additional information must be available in this index to allow more specific identification of the judgement debtor. Such indexes were kept until recently, but were discontinued because of the workload involved in maintaining them manually. Therefore, automated indexes are recommended.

The owner name index would be built up from information provided in title documents. Therefore, a title document must also contain sufficient information to allow more specific identification of the owner than is provided at present. Full name, sex, birth date and mailing address is the minimum information which must be available from the owner name index.

Land parcels are identified in many ways. Common references include:

- street address;
- mailing address;
- lot and concession by township;
- lot and plan number;
- tax roll number;
- mining claim number;
- coordinate designation; and
- existing or historical parcel numbers.

Some identifiers are assigned by the land registration system. Some are assigned by other government agencies. Others have come into existence through general usage over a period of time.

As a minimum, the index for land parcel identification must provide cross-referencing for the following land parcel identifiers:

- lot and plan or concession number; and
- street address.

The lot and plan or lot and concession numbers are the legal identifiers used in the current land registration system. The street address is the most common identifier available to the general public. It must be indexed to allow immediate access to survey and title records.

Other identifiers can be obtained and updated only with the cooperation of other government agencies. These agencies would be responsible for supplying the land registration system with the current identifier and all subsequent changes for each land parcel. This would only be done at the option of the other agencies. However, the land registration system must have the capability to accumulate and index this information if supplied.

S. SPEED AND FLEXIBILITY OF INFORMATION RETRIEVAL

Information regarding single or large numbers of land parcels must be readily available from the system. The current system cannot provide information on large numbers of parcels efficiently. Even with single parcels, conflicts sometimes arise when the only copy of a document or index book is already in circulation.

The availability of cross-reference indexes and provision of duplicate copies of records and documents offers the user interested in a single parcel a fast, flexible information retrieval system.

A central or regional computerized indexing system is essential to provide an efficient retrieval service for aggregated or selected information on large numbers of parcels. The index could be provided in hard copy, microfilm or machine-readable form. Selection of the required information can be performed utilizing the cross-reference indexes and the information they contain.

As a result, the system will have the ability to provide timely selected data on request. This immediately makes it unnecessary for agencies to maintain many files of information duplicating that in the land registration system.

An automated property mapping program would also allow aggregate data to be provided in map form. As well, basic mapping information could be provided and then enhanced by the user to satisfy his specific requirements.

Centralized or regional computer files will also benefit system operation. Regular reporting on system activity can be performed automatically. Land registration information

can be provided to head office areas in any format required for proper functioning of their overall management information systems. Similarly, regular reporting on services provided to other government agencies and the accounting for fees, deposit accounts and credit accounts would be an automatic by-product provided by the central or regional system.

Initially, this information would be provided in hard copy, microfilm or machine-readable form. Ultimately, machine-to-machine transmission of information would be possible for major system users.

VIII

SYSTEM RELATED CONSIDERATIONS

A. INTRODUCTION

Policy and service considerations define the overall needs and objectives of the land registration system. System related considerations define how overall needs and objectives are to be satisfied.

The complete land registration system must be considered. This includes:

- the legal framework;
- the organization of activities; and
- the operating systems.

Improvements are possible in each of the above areas. Many improvements are interrelated. A number of alternatives and options are possible.

The improvements in any one area must complement improvements in another. This is especially true in the operational area. Here, the choice of a manual, mechanized or computerized procedure is simply a choice of the method best able to satisfy the overall requirement.

The following sections discuss each major function within the land registration system. Specific areas for improvement are defined. Where alternatives exist, they are discussed. For the purpose of discussion, it is assumed that the recommended improvements will be implemented.

B. IMPROVEMENT OF THE LEGAL FRAMEWORK FOR LAND REGISTRATION

The land registration system exists within a well established legal framework. Improvement of the system requires modification of this framework. Some legal improvements can be incorporated into the existing system. Others require associated changes to system operation.

As a first step, the new legal concepts must be approved. Many changes require only modification of land registration system legislation. However, some affect other related legislation (such as The Planning Act) or the requirements of other ministries. Approval and cooperation by all affected agencies are essential.

Legal improvements not requiring a change in system operation or increased system workload will produce benefits in two major areas:

- clarification of the legal framework; and
- reduction of the workload for users and system staff.

Clarification is required in three areas:

- cautions and notices;
- covenants and easements; and
- assurance and compensation.

If cautions are continued in the land titles system, The Land Titles Act should be amended to make it clear that they can be registered only to protect proprietary interests in land. The notice procedure should be used for all other interests.

An expiry date for each type of notice or caution will be imposed by the system or by the party registering. Unless renewed, these interests will automatically expire at the end of the period selected.

Improvements common to both systems will:

- require registration of all easements for them to be effective; and
- eliminate the requirement for a dominant tenement for easements and restrictive covenants.

The rules for assurance and compensation will be clarified. Both the land titles and registry systems will eventually provide:

- affirmation of proper completion; and
- affirmation of useful existence.

The land titles system will also provide:

- affirmation of proper execution; and
- affirmation of legal effectiveness.

Adverse possession will be recognized in the land titles system. It will be available under certain conditions where:

- land has been abandoned by the registered owner; and
- boundary encroachments have taken place.

Compensation will be provided when a system error has caused injury to a party relying on an affirmation provided by the system. The principle of a compensation fund as set out in The Land Titles Act will be extended to the registry system. Compensation will:

- include the value of minerals;
- be limited to a ceiling figure for any single claim;
- not be limited to the amount remaining in the fund; and
- where fraud is involved, be paid only when satisfactory compensation cannot be obtained from the defrauding party.

These changes clarify the legal framework but have little impact on workload. Other improvements also reduce the workload of the users and system staff. These include:

- elimination of obsolete requirements;
- simplification of registry system searches;
- deletion of discharges and expired interests in the registry system; and
- simplification of lien search and clearance procedures.

Some concepts and requirements are obsolete or serve no useful purpose. The following should be abolished:

- personal seals; and
- the majority of affidavits.

Registry system searches will be simplified. The required search period will be clearly limited to:

- 40 years; or
- the first prior independent conveyance, if none has been registered within the 40-year period.

A reduction of the required search period will be investigated.

In the registry system, discharged interests will be deleted from the record. The expiry date of interests such as leases will be clearly noted on the abstract index. The searcher will not be required to examine documents whose expiry date has passed.

All leases having a duration greater than 21 years will be registered as leaseholds in the land titles system.

The lien and lien clearance procedures will be simplified. Liens against specific parcels will have to be registered to be effective. This will not apply to municipal taxes, since they create a continuing lien. With two exceptions, any remaining general government liens will be abolished. A government agency wishing to enforce a lien must register it against a particular land parcel. The exceptions are:

- the corporations tax lien, which will be limited to the current corporate owner. Consent from the Corporations Tax Branch will be required before a transfer or grant from a corporation will be accepted; and
- the succession duty lien, which will apply only to the last owner.

The need to search for violations of The Planning Act should be abolished.

Other changes to the legal framework depend upon corresponding changes to system operation. Operational changes are required for:

- improving the writs of execution system;
- introducing the document cover page concept;
- registering complete title and survey information;
- introducing a registration pre-approval procedure; and
- providing copies rather than original records.

These modifications of the legal framework are noted in the discussion of the operating changes.

C. FUNCTIONAL ACTIVITIES AND RESPONSIBILITIES

Improvement of the land registration system will change some existing activities and responsibilities. The functional organization must be modified to reflect these changes. The administrative organization may also require modification. However, re-definition of the administrative structure falls outside the terms of reference of this report.

This section defines the functional organization of an improved land registration system. Discussion centres on activities and responsibilities. Analysis of available equipment is left to later sections. The functional organization must reflect the needs of the system and its users rather than availability of computer, or other equipment.

1. Local Activities and Responsibilities

Local offices are responsible for the registration and storage of documents and plans affecting the land parcels within their jurisdiction. This must continue. Plans and documents will be registered only at the local office. It will continue to be the primary contact point for users of the land registration system.

Searching will remain a local office activity. Copies of all documents and plans registered within its jurisdiction will be retained in the local office.

Document examination and acceptance will continue to be the responsibility of local office staff. Improvement of the legal framework and introduction of a cover page concept will reduce the complexity of document examination. Nevertheless, some problems of interpretation will arise. In this case, support for the local office staff must be available. However, responsibility for registration will remain at the local office level.

Ideally, all plan examination and special requests should be handled by the local office. This may not always be possible. An office may be too small, too busy or lack the skills necessary for performing these functions. Support from outside the local office will always be required for plans requiring detailed examination or verification on the ground. It must also be available for special requests, such as First Applications, and other levels of plan examination as required by local office conditions.

These support activities would be limited to checking and approval functions only. Registration of the documents and plans would remain a local office activity.

Abstracting, filing and document microfilming are local office responsibilities. The local office must retain control over the information within its files. The local office will retain documents and plans until microfilm copies are received. The office must verify that a satisfactory microfilm copy has been obtained prior to return or destruction of a document or plan.

Abstracting is now done manually in each office. Verification that the abstract entry corresponds to the document information will remain a local office responsibility.

A local office has direct responsibility only for the lands within its jurisdiction. However, it is also part of the overall land registration system. Therefore, each office must have access to any information available on a regional or centralized basis. A method of delivery of this information to the local office and local user must be available.

In summary, the local office will be responsible for:

- all land parcel records within its jurisdiction;
- registration of all plans and documents;
- provision of all information required for local office searching either from its own, regional or centralized files;
- checking and approving the majority of documents and plans;
- document data entry;
- verifying the accuracy of abstract entries;
- microfilming all registered documents;
- verifying the microfilmed document and plan records; and
- processing First Applications and applications for Certificates of Title.

Some smaller offices will have difficulty in fulfilling all these responsibilities. Support from, or consolidation with, nearby larger offices may be required. Again, this is an administrative matter and falls outside the terms of reference of this report.

2. Regional Activities and Responsibilities

Essentially, regional activities will provide assistance and a quality control service to the local office. Local offices are largely self-sufficient when performing their day-to-day duties. However, a local office may lack the time or training necessary for a specialized document and plan examination. The required assistance must be provided.

This can best be provided by regional centres.

The primary function of the regional centre would be provision of service to the local office. It would be limited to performing clerical, technical or examination and approval functions on behalf of the local office. Registration would remain entirely a local activity.

Concentration of support activities in regional centres allows adequate staffing, training and efficient equipment for handling large volumes of work. A number of local offices could be serviced by one regional centre. Some activities could later be transferred to the local offices as technology advances.

Each regional centre will require two major staff categories. Clerical staff will process microfilm records. Para-professional legal and survey staff would maintain property map records and, on behalf of the local office, examine and approve documents or plans as required.

Regional centre activities and responsibilities will be of two types. The regional centre will be totally responsible for:

- document microfilm processing;
- plan microfilming, microfilm processing and jacketing, and copy production;
- index record production;
- plan data entry;
- in-depth and field examination; and
- maintenance of current property maps.

The regional centre must also, on request, support local office activities. As a service function, the assistance provided will include:

- advice regarding document and plan examination and registration;
- the examination of plans on an as requested basis; and
- the processing of certain special applications such as First Applications and applications for Certificates of Title.

3. Centralized Activities and Responsibilities

Head office will retain overall responsibility for the land registration system.

Legal and survey professional staff must continue to provide support to the offices. Both would have an increased role in the training and monitoring of local and regional examination staff. With adequate staff training, both local and regional offices will become essentially self-sufficient. The role of the centralized support group in day-to-day registration activity will be reduced significantly.

Implementation of regional centres and data processing techniques requires new skills. Land registration staff must be trained to utilize new equipment and procedures effectively. System staff are required to support the design, development and implementation of new procedures and technology. Operations management staff are required to ensure an adequate level of service to the local offices.

The centralized activities and responsibilities will be:

- administration of the land registration system;
- training and monitoring performance of staff;
- introduction of new procedures and technology;
and
- provision of support services to the local offices.

The operation of an improved land registration system must now be discussed. The following sections deal with each major system activity. Alternative methods, procedures and equipment are discussed wherever appropriate.

D. THE PROCESSING OF PLANS

Plans of survey are used to describe the location, extent of land parcels. A new land parcel is created only after a plan or description defining its boundaries has been registered.

In preparing a plan, the surveyor is required to use the existing survey fabric. Plans must also conform to accepted survey practice. Submission of a plan for approval before registration is, in effect, an application to increase, amend, update or upgrade the information contained within land registration system files. Approval of the plan is contingent upon the results of plan examination. Registration, in turn, is dependent upon plan approval.

An affirmation of useful existence of registered land parcels will be given in both the land titles and registry systems. The risk associated with this affirmation depends entirely upon the quality of survey information. Plan examination ensures an adequate quality of information.

Plan examination consists of three separate evaluations:

- completeness of the submission;
- conformity to survey practice and presentation; and
- accuracy of the calculations.

The submission must be complete. All required documentation must be present. If not complete, the submission must be set aside until the required information is provided by the surveyor.

Examination for conformity to survey practice and presentation requires varying degrees of training and judgement. The land registration system will have five levels of formal examination for practice and presentation:

- limited checklist examination;
- technical examination;
- general examination;
- in-depth examination; and
- field examination.

The depth of examination is dependent upon the type of plan submitted. Plans creating new land parcels or altering boundary locations must be examined in more detail than plans providing information but not altering boundaries. For example, a mortgage survey which merely relates buildings to boundaries could be submitted to a limited checklist examination. A plan for a "First Application", where the extent of ownership is in question, may undergo field examination.

The depth of examination becomes progressively more detailed at each level. However, with the exception of field examination, examination should normally be completed in minutes rather than hours. Examination procedures are outlined below.

Limited checklist examination consists of a check for:

- surveyor's signature; and
- township, lot, plan and parcel identification.

Technical examination includes the limited checklist plus:

- comparison of the plan to existing survey fabric;
- ensuring that evidence and monumentation is shown; and
- comparison with index maps to verify apparent parcel relationships.

General examination includes technical examination plus:

- verification of parcel existence;
- a quick review of field note information shown on the plan;
- a check for the necessary certificates;
- a cursory drafting quality check; and
- comparison of corner coordinates with those on file.

An in-depth examination includes general examination plus:

- a review of all field note information shown on the plan;
- a review for compliance with existing statutes and regulations;
- a total drafting quality check;
- verification of boundaries by referencing existing survey file information; and
- verification of coordinate values for corners.

Field examination consists of verification that the survey plan represents the evidence on the ground. However, calculated dimensions are not normally checked in the field. All other examination processes are performed entirely in the office. Field examinations can be carried out only by visiting the site represented by the survey plan. Fortunately, field examinations are required infrequently.

In-depth examination would be used primarily for plans confirming boundary location. General examination or technical examination will adequately evaluate most other surveys. Plans not affecting title, such as all mortgage surveys, would undergo only a limited checklist examination. Significant problems discovered during local office examination would result in regional examination. This would ensure that information is correct and accurate prior to plan approval.

Coordinate control stations are being installed across the Province. A sufficiently dense network of evaluated control stations within an area will allow surveys to be easily referenced to the Ontario Coordinate System. These areas will be designated as "integrated survey areas". All plans submitted in these areas will be examined to ensure reference ties to this control network have been included. In the remainder of the Province, use of evaluated control stations will be encouraged.

Checking the accuracy of the calculations determines that bearings and distances shown on the plan are valid. It can be done manually, but this is laborious and time-consuming. Small computers and some programmable calculators are capable of performing these calculations quickly and efficiently. The Land Boundaries Program currently uses a small computer for these calculations. Its performance to date has been quite satisfactory.

Ideally, all plan checking should be carried out in the local office. This is not the current practice. Registry plans are checked in the local office. Land titles plans are checked by regional plan examiners. Provision of the required expertise for plan checking in each office is difficult. In-depth examination, field examination and plan data capture and calculation verification require specialized training and equipment. It is impractical to perform these functions in the local offices.

Where local office staff are adequately trained, all other plan examination functions can be carried out locally. Offices not having the required time or trained staff must have these functions carried out by others on their behalf. This service would be provided by a regional centre.

The regional centre function would be limited to examination and approval. Once approved, the plan would be returned to the local office for registration. Some plans, such as those related to First Applications, require a subsearch in the local office immediately prior to registration. On presentation of an approved plan, local office staff would:

- perform any required subsearching;
- collect the registration fee;
- assign the plan number; and
- register the plan.

The plan's effect on location, extent and use of land parcels would then become official. Entries would be made on existing pages or new pages would be opened in the parcel register or abstract index books to complete the registration process.

With these procedures, plan approval and registration will be identical for both the land titles and registry systems. To provide suitable quality control, regional centre staff would monitor plan examination in the local office. This provides a uniform system of plan processing throughout the Province. With high quality survey information, the affirmation of useful existence can therefore be provided in both registry and land titles systems.

A further improvement is possible. Plan registration will require updating of property maps to reflect the new situation. A survey information file could be created during plan checking for use in preparing and maintaining property maps. The plan calculation procedure could be replaced by a combined plan calculation and plan data capture process. Plan calculation would still be carried out. However, the bearings and distances entered for calculation would also be captured in a machine-readable format for subsequent use. This would create the required file of survey information for property map updating.

The methods for preparing dynamic property maps and assigning property identifiers are discussed in the next section.

E. DYNAMIC PROPERTY MAPS AND UNIQUE LAND PARCEL IDENTIFIERS

Property maps illustrate the location of registered land parcels. Unique identifiers differentiate one land parcel from any other parcel in the Province.

When new land parcels are created, existing property maps must be updated to reflect the new situation on the ground. This updating process results in a dynamic property map. A unique identifier must also be assigned to each new land parcel. Creation of dynamic property maps and assignment of unique land parcel identifiers are directly related. Both result from registration of a plan creating new land parcels. Both are discussed in this section.

A dynamic property map must have the following general characteristics:

- all registered land parcels are shown;
- the parcels shown exist on the ground;
- the relative location of a parcel to its neighbours is correct;
- a land parcel illustration (to scale) has approximately the size and configuration of the property on the ground; and
- map parcels are related to the ground in some manner.

Ideally, the map and ground locations of a parcel should coincide. To do this effectively, the existing Ontario Coordinate System grid coordinates should be used. Accurate, coordinated maps would then bear a direct relationship to the ground.

Many maps will be required to illustrate all land parcels in the Province. Each individual property map must fit together with its neighbours in an accurate, controlled manner. This can best be done by establishing external boundaries and working inwards to ever-decreasing map areas.

As a first step, coordinate values of the provincial boundaries would be established. This provides the overall framework for all other area or property definitions.

Next, the boundaries of each registration zone (i.e. regional centre zone) would be established. Within each zone, the boundaries for all counties would be established. Similarly, within each county, the boundaries for the area served by each local office would be established.

This is relatively straight-forward. The required survey and map information is available and sufficiently accurate. When completed, an accurate boundary definition for the area served by each office will be available. This provides the controlled boundaries needed to prepare property maps for each office. The control framework would include all offices. Preparation of property maps could proceed for any office with no effect on the boundary information for any other office.

For each office, one further subdivision of land areas is required. A single property map for the office displaying all land parcels is impractical. Smaller divisions showing blocks of 50 to 200 land parcels are required. Thus, a framework for blocks of land parcels recorded in the office must be selected.

Ideally, the boundaries of the blocks should be easily recognizable land features. Roads, railways, rivers and other natural features provide these easily recognizable boundaries. The transportation network geocode data of the Ministry of Transportation and Communications can provide the information required for establishing block boundaries within the area served by the local office. Some further evaluation of this process is required. However, results to date indicate that it is a relatively straight-forward method for establishing the block framework.

When completed, an accurate, controlled framework of blocks based on major roads or natural boundaries exists for the office. Since it is referenced to the Ontario Coordinate System grid coordinates, it provides a base closely related to the ground. The remaining step is to fit each land parcel recorded in the office into this controlled framework.

The information obtained during plan approval defines the location and extent of each new land parcel. Reference to the known location of roads or ground control stations allows these new land parcels to be fitted into the block property map. Since the block boundaries are controlled with respect to the ground, the individual land parcel boundaries will also be well related to the situation on the ground.

To be of any use, the property maps must display most of the land parcels in the office. The gradual completion of property maps as a result of registration of new plans is not acceptable. However, many of the existing land parcels have been defined on survey plans already registered in the office. Others are defined on plans readily available from sources such as assessment or municipal mapping. To prepare useful property maps, the land parcel information from these plans must be captured. This requires assembling:

- plans previously registered in the office;
- plans readily available from other sources; and
- plans and sketches attached to documents.

The information from these plans would be fitted into the existing block maps. The process of fitting land parcels is discussed later in this section. When the above steps are completed, approximately 70% of the land parcels recorded in the office would be shown on the property maps.

At this stage, property maps could be introduced into the office. Identification of the remaining land parcels is a necessary but lengthy process. There is no reason to withhold use of the property maps while this takes place.

The steps required to complete property mapping are:

- obtain the last registered deed for every land parcel within the jurisdiction of the office;
- match the document description to the property map and modify the property map as required;
- for areas still in question, conduct an historical search of office records to determine land divisions;
- compare the property maps to aerial photography if available; and
- perform a field examination, if warranted, for areas where there are still problems.

During the period required to capture this remaining 30% of the parcels, some documents will be registered for those parcels. In these cases, the steps outlined above to match the parcel description to the property map would be performed by the office staff as part of document registration. Thus, the formal program of map completion will be augmented and accelerated by normal registration activity.

As land parcels are identified and property maps prepared, unique land parcel identifiers must be assigned. The block framework of the property maps allows assignment of identifiers to take place easily and quickly.

Each block in the Province will be assigned a unique number. Ideally, the block number will reflect the coordinate location of the block on the ground. Within each block, parcel numbers will be assigned sequentially to each parcel as it is identified and entered into the block parcel map. Each new parcel would receive the next available number in sequence. Since each block number is unique and parcel numbers are not duplicated within the block, a unique identifier for each land parcel results.

The primary identifier should not be a geographic coordinate. Initially, the location of some land parcels within a block will be an approximation. Adjustment of the parcel location may be required when more precise survey information enters the system. This could require a corresponding adjustment of any coordinate-based identifier. Moreover, a re-adjustment of the basic coordinate framework for the whole of North America is expected to occur in the near future. This adds a further element of uncertainty to the use of a coordinate as the prime identifier. The number used as the land parcel identifier must remain stable. No possibility of change can be allowed. This prohibits use of a geographic coordinate as the primary identifier.

Use of sequential parcel identifiers within blocks provides another advantage. Either the local office or the regional centre can assign the next available parcel number.

The block parcel number would take the following form:

1 2 3 4 5 6	1 2 3 4	1
Block Number	Parcel Number	Check Digit

Establishment of land registration regions or zones may occur. In that case, the first digit of the block number would be reserved for a regional identifier. A check digit (modulus 11) would be used to aid in determining errors. A change in a parcel boundary would result in a new parcel number (and check digit).

Surface, air and mining rights would each receive a unique block parcel identifier. They represent separate interests. Of course, a cross-reference showing the relationships between these rights must be provided. For example, entries indicating the existence of air, mining or other rights would be shown against the record for the surface parcel.

The construction of property maps and assignment of unique land parcel identifiers have been discussed. The form of the property map and its use must also be considered.

Each office will contain a number of individual block maps. An index for these maps must be provided. This will also be in map form. The index map will illustrate the office's jurisdictional area. The block framework and block numbers for each property map will be shown. This allows the user to quickly locate the specific map illustrating an individual land parcel. Coordinate grid lines will be shown on the index map to indicate geographic location.

Each block map will have the same general appearance. The body of the map showing individual land parcels will occupy the majority of the sheet. A standard map surround (border) will contain:

- a directional arrow for orientation;
- the map title;
- a scaling bar;
- a map legend;
- indication of adjoining blocks; and
- for every land parcel on the map, the block parcel number and reference to the most recent underlying survey fabric relating to its boundary.

As a minimum, the basic property map must show, for all land parcels:

- boundaries;
- easements and rights of way;
- block parcel number;
- street names; and
- municipal location.

Again, coordinate grid lines will be shown on the map to indicate geographic location.

Other useful information may not be available when the property map is first created. As it becomes available, the following information could be added to the basic property map:

- location of control stations and the station numbers;
- planimetric (two dimensional) detail from basic topographic mapping, mortgage surveys and land use documents such as by-laws; and
- the numbered portion of the street address.

On request, specialized maps could also be prepared from the property map base information. They would not normally be available in a local office. Examples of this specialized service would be maps showing, for each land parcel:

- last registered owner and instrument number;
- assessment roll number;
- mailing address for the property; and
- mailing address for the property owner if different from that of the property itself.

Property maps could also form the basis for a land data bank. The location of utilities, land classification and other similar map-based uses are possible. The basic design of the system must take this into account. The capability of the land registration system must complement the needs of other provincial agencies. The use of coordinate-based boundary information should ensure the required compatibility.

Property maps could be prepared manually. Automated techniques are available and could also be used. Traditionally, the land registration system has used maps and plans prepared manually. More recently, other government agencies and private firms have successfully introduced automated drafting equipment.

Extensive tests have shown that the use of automated methods for map preparation results in a manpower and time reduction of about 75% in comparable situations.

In controlled tests*, the time to update a property map by adding one parcel was determined to be:

*See Survey Task Force Report No. 3 and Report by Dr. A. R. Boyle, University of Saskatchewan, March, 1977.

- 45 minutes, using manual methods; and
- 10 minutes, using automated methods.

Preparation of the initial property maps requires capturing boundary information for approximately 3,100,000 land parcels. Approximately 25,000 survey plans enter the land registration system each year. As a result, over 100,000 new land parcels are created per year. To prepare and maintain dynamic property maps utilizing manual methods would require ever-increasing numbers of cartographic and clerical staff. Therefore, automated techniques should be employed. In this, and in all subsequent discussion, it is assumed that property map information is maintained by a computer-based system.

Section D, The Processing of Plans, briefly described the capturing of boundary information. In this section, a more detailed description of the capture and use of this information is presented.

Boundary information may be captured by two standard methods:

- the digitizing of X and Y coordinates from a scale-controlled map or plan; and
- direct data entry of the bearings and distances shown on the plan.

The digitizing method relies on the lines shown on the plan representing the actual bearing and scaled distances which they are intended to represent. A cursor is placed on the end points of each line, the scaled bearings and distances are captured and subsequently converted to the actual bearings and distances which they represent. This method is fast but not precise. Actual bearings and distances are not taken from the plan. The lines intended to illustrate the bearings and distances are used instead.

The second method requires data entry of the bearing and distance information shown on the plan. Here, the actual numbers shown on the plan are entered through a keyboard device. This is more demanding and time-consuming than simply locating the end points of lines. The numbers entered must also be checked to ensure "closure" of the land parcel (i.e. that the boundaries meet). A problem with closure could be the result of an error in data entry or in the surveyor's original calculations. If an error is discovered, it must be resolved. Again, this will add to the time required for capturing information.

Both methods can be used in the initial preparation of property maps. Digitizing would be used to establish boundary information at the provincial, zone, county and office level.

Existing maps are sufficiently accurate for boundary definition for these areas. Using the digitizing process, approximately four weeks would be required for this process.

Within an office, the transportation network geocode data of the Ministry of Transportation and Communications would be used to establish block boundaries. The process has been developed and tested by the Ministry of Transportation and Communications. However, it is not currently used as a standard method of producing boundary information. Preliminary evaluation has shown that this would be an acceptable process for establishing block outlines. Boundary accuracy of plus or minus five metres can be readily established.

Further evaluation of the process in a controlled test environment would be necessary prior to starting any wide scale block mapping program.

The process requires use of analytical stereo plotters and encoders. These are used to take information from aerial photographs and produce a magnetic tape file. The photography required exists and is available from either the Federal government or Ministry of Natural Resources. The conversion process and equipment can be supplied either by the Ministry of Transportation and Communications or on a contract basis by private firms.

Current tests indicate that for the area served by any one office, the required block boundaries could be established within two to four weeks.

Production of the property maps requires capturing boundary information from existing plans. Either the data entry or digitizing method could be used. The choice is a function of cost, accuracy and time requirements. Digitizing is the cheapest and fastest. Data entry is the most accurate and time-consuming.

The initial property maps will not be complete. There will be great pressure to produce the maps quickly. Digitizing is, therefore, the preferred method for initial map preparation. Using this process, capture of information from existing plans for any one office area would be completed within three to six months by a staff of four. Again, this could be performed on an in-house or subcontract basis.

Subcontracting is best suited to volume processing requirements. The amount of work required for initial preparation of property maps is much greater than for on-going maintenance. The capture of this initial information on a subcontract basis must be considered. However, subcontracting should be used only for data capture.

Internal expertise and equipment must exist. Land registration system staff should remain responsible for:

- preparation of data capture specifications;
- provision of the source plans to be converted;
- monitoring the quality of work received from the subcontractor; and
- construction of property maps by fitting land parcel boundary information into the block outline.

On an on-going basis, there must be a sufficient number of skilled system staff to be capable of processing the information from new plans entering the system. This consists of two major activities:

- the capture of bearings and distances from the plans; and
- the fitting of new land parcels into property maps.

The equipment and techniques required to maintain property maps will be similar to that used for their initial preparation.

Data entry is a relatively small component of the property map updating process. The more difficult task is fitting the new information into the property map.

Adjustment is required when the boundaries between adjacent land parcels appear not to coincide. The boundary of one parcel may overlap or be displaced from its neighbour. The location of boundaries must be adjusted to properly reflect the conditions on the ground. Boundary lines may have to be expanded, contracted, moved or rotated.

This fitting process will be called "rubberizing". The process requires exercise of judgement and discretion. Resolution of a problem may require:

- a detailed examination of the data causing the problem;
- inspection of plans or descriptions of adjacent properties;
- examination of aerial photography; and
- in some cases, field examination.

The rubberizing process will usually involve trial and error. With computer-based boundary information, it can best be accomplished with a trained operator utilizing an interactive graphics terminal. It consists of a keyboard and visual display screen. A picture of the properties in question is displayed on the screen. The keyboard, and a light pen or "joy stick" allow the operator to interact with the information on the screen and achieve the best fit. An immediate visual comparison is possible.

This rubberizing process would be used for both property map preparation and updating. The acquisition of new, more precise information may change the location on the map of a formerly imprecise boundary. This, in turn, may alter the location of the boundaries of adjoining properties. The time taken to rubberize several properties when new information is received must be short. Updated property maps will be required quickly. Therefore, map information must be processed quickly.

The fitting of precise information may also occur during initial property map preparation. Where an entire area is covered by precise surveys, the actual location of land parcels can be entered. In this case, the base map for the block would be altered or rubberized to fit the precise surveys. This requires a notation of the precision of boundary information as it is captured. Depending upon the quality of the information available, boundary information would be in the form of crude, approximate or precise coordinate values. This file of coordinate values will be referred to as the boundary register. It is the digital form of the property maps.

The boundary register will contain the coordinate values for the land parcel boundaries. Each block and, therefore, each land parcel is geographically referenced to the earth's surface. The geographic coordinates for the approximate centre of the land parcel can be determined from the known boundary data. The land parcel geocentre would be calculated and available from the boundary register for use in searching on a geographic basis.

The survey plans used to create the boundary register will be stored after registration. They form the survey file. As part of plan data capture, a cross-reference or link from the block parcel number to the survey file will be created. This is the survey register. It contains the cross-reference entries linking each survey plan to a specific land parcel.

Both the initial survey file and boundary register will be created during the initial mapping process. All new plans filed to update and upgrade the maps will be added to the survey file. Also, any map update will be reflected in an update of the boundary register.

Property maps, prepared from the boundary register information, will be available to the system user. The boundary register itself will not be directly available. It is intended only for system use.

The survey file, containing all registered plans, and the index to these plans, the survey register, will be available to the user. Copies of plans or index pages will be provided as required.

F. THE PROCESSING OF DOCUMENTS

In the present system, the processing of documents involves the following important steps:

- examination;
- approval;
- fee and tax collection;
- registration; and
- abstracting.

These basic functions will remain. However, the methods for performing these functions will change as system improvements are introduced. The improvements affecting the processing of documents are:

- introduction of the cover page format;
- changes in the examination procedure;
- organization of the index records by land parcel;
- introduction of the microfilm document system; and
- introduction of enquiry pads and intelligent cash register terminals.

The cover page format will be introduced as part of simplification and standardization of documents. It will contain all information necessary to identify the land parcel, the type of transaction, the parties affected and the other information required for abstracting. At present this information is often scattered through a number of pages. Appropriate modifications to the legal framework will result in presentation of all required information on the top (cover page) of each document. The cover page should also contain the necessary signatures. The information on the cover page will govern in any transaction. Succeeding pages of the document simply set out additional terms and conditions as required.

On presentation of the document, two types of examination may be required:

- examination for proper completion in both the land titles and registry systems; and
- examination for legal effectiveness in the land titles system only.

Examination for proper completion will be carried out by the counter staff when documents are presented. Essentially, it is a check to determine that the required information is present and that the document has been completed properly. The cover page will be checked to ensure that, for example, the following information is present:

- the land parcel identifier;
- the names of the parties;
- the type of transaction;
- the document expiry date (if applicable); and
- the parties' signatures.

The clerk will also determine that the whole document complies with the format requirements of the appropriate Act and regulations. A check to determine that the land parcel exists will also be conducted at this time by using the enquiry pads described in Section J, Local Office Systems and Procedures.

Examination for proper completion will be relatively straightforward and can be conducted quickly. A standardized first page, the removal of some requirements and affidavits and the clarification of the legislation will all reduce the time required for this check.

Documents rejected at this stage will be returned. Correction and re-submission can then take place where possible. If a document is acceptable, no further examination will be required in the registry system.

Documents entering the land titles system will also require examination for legal effectiveness. Here, the document itself must be more closely scrutinized to ensure its legal validity. The parcel register must also be checked to ensure that the document can be registered. Again, the document will be returned if unacceptable.

Once accepted, collection of the required fees and tax and assignment of the document registration number will take place. Since registration is effective only upon payment of the proper fees, assignment of the registration number should occur after fee collection.

Three activities will be required after registration:

- creation of an up-to-the-minute file of information for subsearching;
- creation of the abstract entry in the index records; and
- preparation of documents for subsequent microfilming.

Provision of a three-part form as the cover page will simplify these processes. The bottom (third) copy of the cover page will be separated and placed by the cash register to replace the fee and receiving book. This will provide immediate availability of all required information for subsearching up to, and including, the latest registration. The use of enquiry pads will make subsearching of this file a very simple process.

The document cover page will contain all the information necessary for abstracting. The second copy of the cover page will be separated and sent to the abstracting area. Since the abstract entry will be contained on the cover page, abstracting becomes transcription of the information from cover pages into index records. This will simplify the abstracting process significantly.

The top (original) copy of the cover page and any other pages of the document will then be removed from the counter area and assembled into batches for microfilming. The microfilming process is described in Section G, Storage and Retrieval of Documents and Plans.

In the existing land titles system, registration is not effective until an entry is signed in the parcel register. However, system users perceive registration to be effective on acceptance of documents. Although documents are seldom returned after acceptance, this uncertainty of registration is undesirable. Ideally, all necessary checks should be performed before registration to ensure that the document is not rejected subsequently.

Users will undoubtedly expect the system to provide same-day examination, approval and registration. It should be possible to provide this service for the common, straight-forward documents such as transfers, charges and cessations. These should be examined for both proper completion and legal effectiveness at the time of presentation. Problems in processing all the work are likely to be experienced only in large offices on busy days.

Complete same-day processing is not feasible for complex and unusual documents such as sale papers and transmission applications. To avoid the possibility of non-registration, parties should be encouraged to submit those documents for pre-approval.

Documents submitted for pre-approval should be examined for proper completion at the time of presentation. At this time, the parties should also be required to specify the proposed registration date. The examination for legal effectiveness should take place later but prior to the registration date. Parties should be advised of any problems and given an opportunity to resolve them. On the selected registration date, the documents should be registered automatically if no other registrations have taken place in the meantime. If any activity has occurred, the parties should be notified and be given a chance to resolve any problem, if possible.

If a complex or unusual document is presented on or just before the intended registration day, it should be registered on the intended day if possible. If not possible, it should be accepted after an examination for proper completion only. The examination for legal effectiveness should take place later. If acceptable, registration should be effective when the document is actually registered and not from the time of initial acceptance as in the present land titles system.

The relationship of other improvements to the registration process can now be discussed.

Parcelization of the index records will assist both system users and staff.

Introducing computerized index records for both the registry and land titles systems must be considered. It requires a cover page format suitable for data entry. A computerized index of current title information is an essential step towards providing automated methods of subsearching in the office. The introduction of intelligent cash registers and enquiry pads would greatly simplify the registration and associated processes.

An intelligent cash register will allow:

- simplified cash balancing procedures;
- automatic debiting of credit or deposit accounts;
- automatic updating of land parcel registration information;
- automatic activating of land parcel identifiers on plan registration;

- capture of information required for activity reporting; and
- automatic assignment of registration number, date and time.

Enquiry pads will allow fast access to the land parcel registration information. They will greatly simplify the subsearching procedure. Section J, Local Office Systems and Procedures, describes their operation in detail.

G. STORAGE AND RETRIEVAL OF DOCUMENTS AND PLANS

The present land registration system stores both documents and plans in their original form. Paper documents are kept in the local office for public searching. A microfilm copy of the document is sent to archival storage and another is kept in the office as back up in case the paper document is missing.

The original plans are kept in the local office. Reproducible copies of most plans are kept by a plan reproduction centre. Here, paper copies of the plans are produced and sent back to the local office to fill user requests for plan copies.

The form of the original plans and documents must be preserved. A copy of the registered plans and documents, including signatures, should be available as evidence supporting registration activity.

Two methods of storage retain the original form and signatures:

- storage of the original plans and documents; and
- storage of film or electronic images of the plans and documents.

Storing original plans and documents in the land registry offices is unsatisfactory. There are well over 1,000,000 documents registered each year. This figure increases by about 5% (compounded) annually. A similar growth exists with the storage of plans.

As the files grow, additional storage space is required. Space shortages develop and can only become more severe. These large files are difficult to maintain manually. A better storage method is required.

Images of the documents and plans could be stored on microfilm or in a video file. Using the video file approach, television cameras would be utilized to take pictures of documents and plans. The pictures would subsequently be stored on video tape.

The video file system utilizes a computer interface to retrieve document and plan images from the video tape. These are then displayed on a terminal video screen. However, a video file system is not practical at this time. Equipment costs, development costs and operating costs are unacceptably high. When the system becomes economically viable, it should be considered further.

Microfilm requires less than 2% of the space required for paper storage. All the documents (about 34 million) now contained in the land registration system would occupy only 200 microfilm filing cabinet drawers. These could be contained in about 1,500 square feet of floor space. Microfilm retrieval is considerably faster than document retrieval. It is also suitable for storage of both documents and plans.

Presently, each office microfilms documents on 16 millimetre film. Most offices use the film simply as a method of archival storage. However, the Toronto and York South office has been operating a jacketed microfilm document system since 1964. Here, a 4-inch by 6-inch jacket is used to accommodate five rows, each holding up to 12 frames, of 16 millimetre film. Thus, a single jacket can accommodate up to 60 document pages at a reduction ratio of 24:1. Roll film is also provided for inspection of the older records not contained in microfilm jackets.

These microfilm systems have proven acceptable to both office staff and users. Jackets require considerable staff time for insertion of the microfilm strips. For the user, positioning the reader to the required document image is also required but causes little difficulty. There is little likelihood of several users wanting access to the same jacket.

Roll microfilm is used infrequently. Loading of the microfilm reel and positioning to the required document image can be somewhat time-consuming. However, more automated equipment is not justified in the Toronto and York South office because of the low demand for roll film document records.

The document microfilm system proposed for all offices is an improved version of the Toronto roll film operation. Three major differences are proposed:

- cartridge rather than open reel microfilm will be available to system users;
- microfilm readers will have high-speed document location capability; and
- paper copies of microfilm images will be produced to reduce the time spent by users in examining documents on the microfilm readers.

Document microfilming will continue to take place in the local office. Two rolls of microfilm will be produced during microfilm processing. One roll will be used for archival and security purposes. The other roll will be used as the document file.

Processing of the microfilm will take place at the regional centre. The regional centre will insert the duplicated roll of microfilm in a microfilm cartridge. This cartridge will be labelled and indexed with the approximate location (odometer count) of a number of registrations on the roll. Indexing is required to allow users to quickly locate the section of microfilm containing the information they need.

The indexed cartridge will then be returned to the local office. During the period from document registration to return of the microfilm cartridge, the original paper document will be retained in the local office. When the microfilm cartridge is received, the paper document may be destroyed or returned to the user. No paper document will be permanently stored in the local office.

The number of paper documents stored temporarily in the average local office will then be little more than the number that can be accommodated on a single roll of microfilm. This is conservatively estimated at about 350 documents. These could be easily contained in a single filing cabinet drawer.

Plans will also be microfilmed. However, 35 millimetre microfilm must be used to accommodate the larger sized plans. Microfilming of plans cannot economically be performed in the local office. This would require purchase of a 35 millimetre microfilm camera for every office. Because of the low plan volumes, these would be extremely under-utilized. Therefore, each regional centre will be equipped with a 35 millimetre microfilm camera. After registration, the plan will be microfilmed in the regional centre and the processed film used to prepare a microfilm jacket or aperture card.

A microfiche duplicate of the jacketed plan, along with a sufficient number of paper copies, will be returned to the local office. The original copy of the plan can then be returned to the surveyor.

Since there is no need to retain plan originals permanently in the system, they will no longer have to be drawn on durable materials such as linen or plastic. Microfilming of plans would allow drafting by ballpoint pen on vellum for the purposes of the land registration system.

This could result in significant user cost savings. A 36-inch by 50-foot roll of drafting film costs about \$130. An equivalent roll of paper suitable for microfilming costs

about \$11. An automatic plotter capable of drafting in ink on linen or plastic costs about \$80,000. The equivalent machine for drafting on paper costs about \$50,000. The potential use of automatic drafting equipment would be placed within the reach of more survey firms.

There is one potential problem with the microfilming of plans. Paper copies produced from microfilm copies of oversized plans may not be enlarged to the full size of the original plans. This may not be acceptable to users. This potential problem could be overcome by microfilming oversized plans in sections. Alternately, stricter standardization of plan sizes acceptable to the land registration system could be imposed.

Both a microfiche copy and paper copies of plans are returned to the local office. The microfiche copy is required for back-up when the supply of paper copies is exhausted. It is also used directly by system users. This requires installation of at least one microfiche viewer in each office. Again, with larger sized plans, only a portion of the plan can be viewed at one time. This need not cause a problem since most users are interested only in a specific section of a plan. Those users requiring the complete plan would normally purchase a paper copy rather than view the microfilm record.

Each local office will be equipped with:

- one or more microfiche viewer/printers to be used for examining and producing a paper copy of microfiche plan records;
- one or more high-speed cartridge roll microfilm reader/printers for examining and producing a paper copy of microfilm records; and
- microfilm storage cabinets for document cartridges and plan microfiche.

Retrieval of the microfilm records from the document and plan files will be manual. Automated techniques are available. However, none is satisfactory for the proposed system operation. All microfilm records will be physically stored, in sequence, in microfilm cartridge holders or microfiche filing cabinet drawers. Visual indexing and labelling appearing on the cartridges, microfiche and file drawer tab cards will be used to identify document registration numbers and plan numbers.

Duplicates of the local office microfilm records will exist in the regional centres. Loss, theft and alteration of documents cease to be problems. Security and back-up of local office land registration records becomes satisfactory.

H. ABSTRACTING, SUBSEARCHING AND AUTOMATION

The present abstracting process is entirely manual.
Clerical staff:

- inspect each document or plan after registration;
- update the fee and receiving book;
- determine the land parcel affected;
- locate the relevant page in the abstract index or parcel register;
- develop a short-form index record entry reflecting the intent of the document or plan;
- make this entry in the next available space on the page; and
- in the land titles system, obtain the necessary signature making the entry in the parcel register effective.

The manual nature of the abstracting process is a weakness of the present system. It is time-consuming and requires highly trained staff. System inefficiencies, that could lead to operational breakdown, develop when the abstracting process falls significantly behind registration activity.

Simplification of the abstracting process is possible. However, it depends upon introduction of other land registration system changes. The changes required to improve the abstracting process are:

- the cover page concept;
- property maps and parcelization;
- intelligent terminals for data capture; and
- computerized index records.

Each of the above changes is described individually elsewhere in this Chapter. In this Section, only their impact on the abstracting and subsearching processes is discussed. They will, in all likelihood, be implemented at different times but in the order stated above. The impact of each change on both systems staff and users is discussed next.

The cover page will be introduced as part of simplification and standardization of documents. It also affects abstracting and subsearching by:

- eliminating fee and receiving book subsearching; and
- providing all of the information necessary for abstracting.

After registration, a copy of the cover page will be placed on the front counter. This serves as immediate notice of the registration and provides a complete record of the intent of the registration. The fee and receiving book will likely still be required for subsearching at this stage.

The cover page also contains all of the information necessary for abstracting. This includes the names of the parties, the nature and intent of the registration and a description of the land parcel. Describing the land parcel can be difficult in the current system. Lengthy written descriptions are still used for many land parcels. In these cases, a short-form entry showing book, page and registration number of a prior document describing the same land will be given as the land parcel description on the cover page. A full legal description will be provided on subsequent pages of the document. The cover page land parcel description will then lead the abstract clerk directly to the book and page to be updated. Abstracting will simply consist of transcribing information from the cover page to the book.

Introduction of property maps and parcelization facilitates unique identification of every land parcel. Description problems will disappear. A unique block parcel number immediately identifies the parcel in question. This will serve as the legal description on the cover page. Eventually all metes and bounds descriptions within the documents themselves will be replaced by sketches or plans in the survey file. The cover pages will now be filed in block parcel number sequence to allow easy subsearching. Subsearching will be limited to review for a specific, easily located land parcel rather than a review of all registrations in the cover page file. Subsearching in the fee and receiving book could be eliminated at this stage.

Local office intelligent terminals and enquiry pads further simplify subsearching. Enquiry pads allow determination of activity against a land parcel without having to consult the cover page file or fee and receiving book. Registrations are noted immediately against the land parcel they affect. The user can quickly locate registrations not yet abstracted. The problem of non-current abstract indexes and parcel registers is replaced by immediate availability of registration information.

To this point, it has been assumed that abstract information will be transcribed into a manual record. However, an automation alternative also exists. The information content and security of the index record is of primary importance. The format for storage and retrieval is secondary. A change from the present books and registers is possible. The index records could be computerized.

Index records is a general term. It refers to all information abstracted from registered documents and plans. This includes each entry presently recorded in:

- abstract indexes;
- parcel registers;
- condominium registers;
- general registers; and
- other special purpose registers.

Computerization of the index records requires capturing of abstract information in a machine-readable form. Index records for survey information will be captured as part of dynamic property mapping as described in Section E, Dynamic Property Maps and Unique Land Parcel Identifiers. Index records for title information must be captured from document cover pages.

Cover page information capture requires a data entry terminal. The most suitable terminal consists of:

- a keyboard, similar to a typewriter, for keying in information;
- a display unit, providing a fill-in the blanks format for data to be entered; and
- a magnetic file, for machine-readable storage and recall of the information entered.

The abstracting process will become a data entry process. Information from the cover page will be entered on the keyboard. It will be verified by visual comparison of the displayed information to the cover page or by re-keying. After verification, machine-readable index records are available for computerized processing.

Computerized production of index records offers a number of advantages over manual processing:

- expired interests such as notices, cautions, leases and discharged mortgages could be automatically deleted from the index records; and
- abstract entries could be automatically duplicated and inserted into the records for all land parcels affected by the registration. For example, registration of a reference plan would result in an automatic entry against each land parcel affected by the plan.

Automatic updating and rapid selective information retrieval are practical only with computerized index records. However, the massive amount of information to be stored (the total historical file in both the registry and land titles systems) requires use of large regional or central computer systems.

The index records may be stored regionally or centrally but they are also required in the local office. This leads to an examination of the methods by which stored information can be made available to the local offices.

Index records could be accessed directly via terminals in the local office. This service is best suited to systems where data records may change several times a day. In the land registration system, records often change only once in a number of years. The costs of terminals (at least one in each local office), data communications facilities and central computer system would be prohibitive at this time.

Alternately, index pages could be produced in either microfilm or printed form. Both are "hard copy" records of the index information. Both would be produced using batch, rather than on-line techniques. Both would provide a permanent record in the local office rather than an "on-demand" record accessed via terminals.

The method chosen for providing index information is dependent upon the requirements of the system. This leads to a consideration of the required system configuration.

It is expected that three separate registers for index records will be provided. A title register will contain information abstracted from documents. A survey register will contain information abstracted from plans. A general register will contain other information not related directly to specific land parcels (such as wills).

As new index entries are processed, index pages must be updated. Ideally, the index file should be updated on a daily basis. However, the logistics of data capture, computer processing, index page production and return of information to the local office may prohibit same-day updating.

The need for daily updating is reduced with the introduction of local office terminals. These terminals will allow a system user to determine if registrations have occurred which are not shown on the index record in the local office. They will also lead directly to the cover page for any registrations that have taken place.

Updating the local office index records could, therefore, occur on an "as required" basis. This could be related to the activity against the land parcels. For example, when a predetermined percentage of land parcels in the office require updating, a complete set of index records could be produced.

Reproducing the entire index file avoids the need for selective refileing of updated index pages. The office simply replaces the complete index file. It also simplifies index production. The complete file for an office rather than individual land parcel records are processed.

Waiting for the entire index file to be updated would probably not be acceptable. Interim updating of the file could relieve this problem. A cumulative daily record could be produced to show each index entry not yet in the main index file. In effect, the accumulation of registrations against any land parcel since the last major update of the index would be shown. It would contain all of the abstract entries which are not yet included in the master index in the local office. This results in a two-step index record search process.

A more satisfactory alternative is possible. An individual page could contain only the index entries for a single land parcel. In this case, a completely new page would be produced for each land parcel when a registration against that parcel occurs. It would be sent to the local office and replace the existing index page for that parcel in the local office master index file. In this way, the local office index books are kept much more current. They will be out of date only for the amount of time necessary to produce and refile the updated index page for that land parcel. This is the recommended method for automatic production of index pages.

The need to replace individual pages as index entries are processed completely rules out the use of roll microfilm. Replacement of individual pages would require cutting and splicing of individual pages on the microfilm roll. This is operationally and financially unfeasible.

However, the microfilm record could be kept in microfiche form. All the index pages required for a single land parcel could be contained in a 4-inch by 6-inch microfiche card produced by a computer output microfilm (COM) unit.

The COM alternative is attractive for the following reasons:

- microfiche are compact. The problems and costs associated with distributing and storing paper records are eliminated; and
- COM records are produced quickly. A COM system will produce microfiche at a rate equivalent to 10,000 to 20,000 pages per hour. High speed printers typically operate at only 1,000 to 2,000 pages per hour.

The major drawback of the COM system is the expense of the COM unit and microfiche processing. COM production could only be justified on a centralized basis. Centralized processing may introduce delays in transporting information to and from remote local offices.

With printed index pages, the space required for the index books would not be reduced. However, printed pages are directly readable whereas COM records require use of a microfiche viewer.

Printed pages could be produced centrally or on the regional centre computers. Both options are possible and must be evaluated. However, regional printing of index pages simplifies the flow of information to and from local offices. It also spreads the printing workload over 9 centres. This reduces the time required for printing, handling, checking and distributing updated pages.

Computer produced index records will be one of the last improvements implemented in the local office. Introduction of this change is dependent upon achieving satisfactory service levels and an acceptable turnaround time from registration to the availability of the updated index page in the local office. It is practical only after introduction of:

- the cover page concept;
- unique land parcel identifiers; and
- intelligent local office terminals for cover page data.

However, it results in a number of significant benefits:

- manual abstracting in index books is replaced by abstract data entry;
- index books are freed for use exclusively by counter staff and system users;
- a copy of lost pages or books can be easily produced from the computerized information; and
- a computerized system can more easily cope with heavy registration volumes.

I. INFORMATION BY-PRODUCTS OF THE IMPROVED SYSTEM

The improved land registration system utilizes computer-based systems and automated processes to solve specific operational problems. Computer-based data files will be created and maintained for registration, searching and property map functions.

However, these data files can be used for many other purposes. Information that is now available only on a manual basis will be stored in computer readable form.

The major computer-based data base files will include:

- a title related file for each land parcel;
- a survey related file for maintenance of dynamic property maps;
- an accounting file to indicate the status of deposit and credit accounts; and
- a registration activity file, containing the information regarding new registrations since the last update of the indexes.

Availability of this information will allow:

- regular operational report preparation;
- provision of selected or aggregate registration data; and
- provision of map related (graphic) data.

Automatic generation of regular reports will be an important capability of the new system. A description of the reports prepared now was given in Chapter III. Most of these could be produced automatically from the data contained in the computer-based files.

For example, the daily reconciliation sheet could be produced automatically via the intelligent cash register terminal. Counters maintained by the terminal itself could provide a detailed breakdown of cash and credit transactions. The weekly activity report, monthly return, quarterly return and annual return could be produced from the registration activity file. Similarly, reports for other ministries could be produced automatically when required.

Presently, all regular reports are prepared manually by local office staff. Occasionally, special breakdowns are required for one-time reports. This is often difficult to do manually. It is simpler with computers. For example, within the computer-based files, a breakdown of pertinent registration data could be maintained for:

- deeds;
- mortgages;
- assignments of mortgage;
- discharges of mortgage (including partial discharges);
- leases and assignments;

- deposits;
- by-laws;
- wills;
- agreements;
- cautions;
- First Applications; and
- other.

Similarly, a breakdown of plan registration could be maintained for:

- subdivision plans;
- condominium plans;
- reference plans; and
- other.

Accurate records will be automatically maintained for search fees and activity. This could include:

- number of searches; and
- number of paper copies.

Head office monitors the backlog of local office activity started but not yet completed. Backlog reporting can also be automated. The system must first note that activity has commenced and then note that it has been completed. This could be done through a log-in, log-out process. With an intelligent cash register terminal, log-in could be considered to occur at the time the transaction is rung-up. Log-out, or completion, would occur as a result of abstracting, the collection of the balance of fees through the cash register or through a separate log-out transaction. This process could also be handled through an enquiry pad.

Reports could be provided to show the number of requests outstanding for typical services such as:

- registrar's abstracts;
- First Applications; and
- Certificate of Title Applications.

The number of man-hours required to clear back-log conditions can also be calculated. A standard hour per operation factor would be used for calculation.

Reports showing aggregate, statistical or operational data could be provided on an ad hoc basis. For example, reports on system operation statistics, mortgage data, land transfer taxes and other related taxes could be produced on request. This benefits users such as the Ministry of Revenue. These agencies must currently spend public funds to collect such information manually. With proper system design, up-to-date information could be easily provided for many requests with little or no additional computer programming effort.

It will no longer be necessary to clerically review each document to obtain required data elements. The system will be capable of providing reports containing abstracted data according to user requirements. This will result in a direct user saving of cost, time and effort. If required, agencies who are also computerized could obtain this data in machine-readable form.

The ability to obtain selected information will be of special benefit to bulk users. Since both title and survey information is maintained by the system, reports could be prepared on a geographic or title basis. System output could be in the form of maps or printed reports.

Some major examples of bulk users and their requirements are:

- all agencies who maintain property records. These include housing, development, surveying, engineering, mapping, planning and environmental control agencies. For example, a municipal government would be able to obtain data on non-resident land owners.
- utility and transportation agencies require large amounts of aggregate information related to land use, ownership and boundaries. An agency such as the Ministry of Transportation and Communications could easily maintain its special agreements records. All changes in ownership abutting provincial highways could be automatically reported.
- tax assessment and real estate agencies must continually update their ownership and land records. The Ministry of Revenue and agencies such as the Toronto Real Estate Board manually search land registration records for land transfer data. Automatic reporting would eliminate the need for such agencies to maintain search staff.
- various agencies are interested in the environmental balance aspects of land development. It would be useful if the conservation authorities could obtain property map overlays to illustrate ownership in flood plan areas.

J. LOCAL OFFICE SYSTEMS AND PROCEDURES

Improvement of the land registration system will require changes in local office systems and procedures. The functions of a local office will remain much the same as they are now. However, the appearance and procedures within the office will change.

This section describes local office systems and procedures after the introduction of:

- the cover page concept;
- the microfilm document and plan system;
- computer produced index pages;
- intelligent cash register terminals, data entry terminals and enquiry pads; and
- property maps and unique land parcel identifiers.

Local offices will be largely self-sufficient. They will perform the majority of plan and document examination. When assistance is required, it could be obtained from either a regional centre or head office. With adequate training and staffing, the degree of assistance required will be small.

The filing cabinets and shelves used to hold paper documents and plan originals will be gone. Compact storage units, containing microfilm copies of documents and plans, will provide the same information but require only about 2% of the storage space. Title searchers and other users requiring documents and plans from the system will be provided with copies of the microfilm records.

The public search area will be provided with cartridge microfilm reader/copiers for document inspection and reproduction. A microfiche viewer/copier will be provided so that users can view plans if white print copies are not available.

Searching will be much more straight-forward. Property maps will show each land parcel within the jurisdiction of the local office. The property identifier will be readily available from a property map or from one of several cross-indexes of commonly used property identifiers. The index records for both the registry and land titles systems will be completely parcelized. The record for a parcel will show all entries currently affecting that parcel. The parcelized index will be maintained by computer. New index pages will be produced upon registration of new documents or expiration of previously registered interests.

Registration of documents will be much simpler. Documents will be shorter and registration requirements simpler. The first page of the document will set out all significant information required for abstracting. Checking for proper completion of the document and, in land titles only, for legal effectiveness, will take less time. Under the new system, documents submitted for pre-approval would have most potential problems resolved prior to registration day.

After payment of the required fee, an intelligent cash register terminal will automatically assign and print the registration number on the cover page for documents or plans accepted for registration. All pertinent registration data including fees, tax, registration date and type of document or plan will also be captured by the cash register terminal. Registrations will be recorded as they occur.

After registration, a copy of the plan or document cover page will be immediately available for subsearching. The daily file of cover pages will provide users with a complete up-to-the-minute subsearching capability.

The summary information captured by the cash register will also be available to searchers. Enquiry pads will be available to both office staff and system users. Entering a land parcel identifier (block parcel number) on an enquiry pad will display the last registration processed against that land parcel. The display will also indicate if this registration took place after the last update of the index records. If so, a review of the cover page file would be required. Display of the last registration number will allow simple and fast retrieval of cover page information from the subsearching file.

A second copy of the plan or document cover page will be immediately available for abstracting. However, abstracting will no longer involve manual transcription of information into index books. Rather, abstracting will become a data entry function. A data entry (typewriter) keyboard and display screen will be used by office staff to convert abstract information from the cover page into a computer readable format.

After verification that the information from the cover pages has been entered correctly, it would be stored on a magnetic tape cassette. The cassettes would be sent via courier service to the regional centre for processing. Updated index pages would subsequently be returned to the local office for filing in the index record books.

This discussion of local office procedures assumes that each local office is provided with several new types of equipment. The characteristics of this equipment must be discussed.

Documents will be stored in cartridge microfilm form. Plans will be stored on microfiche. Documents will be microfilmed in the local office. Plans will be filmed in the regional centre. Preparation of microfilm cartridges, microfilm jackets, plan paper copies and plan microfiche copies for the local office will be done at the regional centre.

Each office will be provided with the following microfilm related equipment:

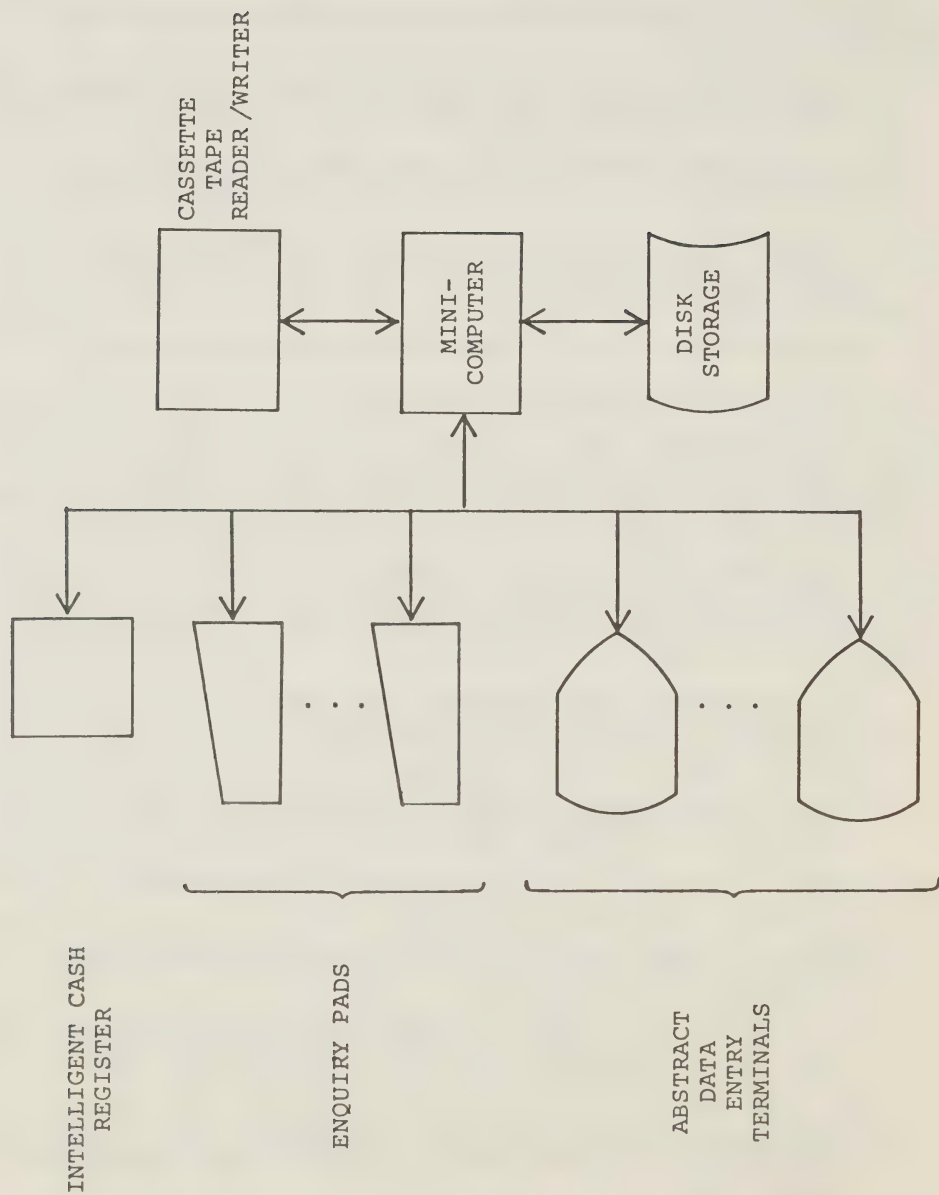
- a microfilm camera (present equipment), for filming registered documents including cover pages;
- a high speed cartridge roll microfilm reader/printer, for viewing and making paper copies from microfilm;
- a microfiche reader/printer, for viewing and making paper copies from plan microfiche (as a back-up to plan paper copies);
- one or more microfilm cartridge storage units; and
- one or more microfiche storage units.

As a minimum, each office will have one of the above units. Larger offices will require additional units to cope with volume demands. In most offices, only the number of cartridge roll microfilm reader/printers will need to be increased.

Each local office will also be provided with an intelligent cash register terminal, data entry terminal and enquiry pads. The basic office configuration shown in Figure 28, page 210, includes the following components:

- an intelligent cash register, for recording financial transactions and capturing registration data;
- one or more enquiry pads, for subsearching and verifying land parcel identifiers;
- one or more data entry terminals, for entering abstract information from cover pages;
- a disc storage device, as the primary storage medium for local data files;
- a cassette tape unit, for capturing data entered on the cash register and data entry terminals as well as providing back-up storage capability; and
- a minicomputer processor, for controlling all of the above units and providing the required data processing capability.

FIGURE 28
BASIC LOCAL OFFICE EQUIPMENT CONFIGURATION



All local files will be contained within the disc storage unit. The type and capacity of the disc storage device will depend upon the size of the local office data files. Three files of information are required:

- a land parcel file, containing a record for each land parcel within the office's jurisdiction;
- a registration journal, containing a record of each registration not yet reflected on the index books; and
- an account file, containing a record for each deposit or credit account user.

As transactions are processed through the cash register, these files will be updated to reflect the most current situation. Enquiry pads, therefore, will always retrieve the most current status when they access information from the disc files. At the end of each day a magnetic tape cassette containing all of the information captured through the cash register or data entry terminal as a result of daily activity will be forwarded to the regional centre for processing. Information from the regional centre is received each morning and used to update the local office disc files and other records.

This configuration does not allow for plan data entry. Plan data entry will be carried out in the regional centre as part of plan calculation verification in the property map updating process. However, plan registration information will be captured in the local office. Receipt of this information will allow the regional centre to complete updating of the property maps and assign the unique land parcel identifiers.

The local office systems, procedures and equipment are well within the capability of local office staff. Equipment is readily available and well proven. Procedures are straightforward and easily understood. Few special skills are required. With adequate operating instructions and a short training period, both local office staff and system users will be readily able to adjust to the new environment.

K. REGIONAL CENTRE SYSTEMS AND PROCEDURES

Regional centres will be established to supply specialized skills and perform some functions on behalf of local offices.

The regional centre will perform all in-depth and field examination of plans for local offices. For smaller or busier offices, the regional centre may, on an overload basis, carry out other types of plan or document examination.

Local offices may sometimes require assistance regarding the acceptability of a document or plan. Regional centre staff will be responsible for responding to these problems as they arise.

Assistance to local offices will be supplied on demand. This type of regional workload will vary from day to day depending upon the specific needs of the offices being served. Other activities will be performed on an on-going basis. These include:

- microfilm developing and duplicating;
- preparing cartridges for document roll microfilm;
- plan microfilming, jacketing and microfiche production;
- plan data capture and property mapping;
- computerized index record processing; and
- information reporting.

Regional centres will perform all microfilm processing, duplicating and cartridge, jacket and microfiche preparation functions. Local office cameras will continue to produce exposed 16 mm microfilm of registered documents. When a roll of microfilm is completely exposed, it will be forwarded to the regional centre for processing. After processing, the original roll of microfilm will be duplicated and then sent to archival storage. The duplicate roll will be placed in a microfilm cartridge and the approximate position of registered documents on the roll noted in an index on the back of the cartridge.

The regional centre will also be responsible for the microfilming of registered plans. To accommodate large size plans, 35 mm microfilm must be used. The local office cameras are suitable only for 16 mm film. A 35 mm camera is not justified in any local office. After a plan has been registered in the local office, it will be forwarded to the regional centre for microfilming. The processed film will then be used to prepare a microfilm jacket of the plan. A microfiche duplicate of the jacket and the required number of plan paper copies will be returned to the local office. Copies of plans required by other agencies, such as the Ministry of Housing, will also be prepared at the regional centre.

To perform these functions, the regional centre requires the following microfilm related equipment:

- a microfilm processor for processing exposed rolls of 16 and 35 mm microfilm;
- a roll-to-roll microfilm duplicater, to produce a copy of the original microfilm;

- a 35 mm camera, for microfilming registered plans;
- one or more cartridge microfilm viewers for indexing the position of registered documents;
- one or more microfilm jacket viewer/inserters, for inserting microfilm images into plan microfilm jackets;
- one or more microfiche printer/processors, for producing microfiche copies of plan jackets;
- one or more microfilm roll storage units for document and plan microfilm back-up;
- one or more microfilm jacket storage units, for storing plan jackets; and
- a printer, to produce paper plan copies.

Computer-related equipment is required for plan data capture and property mapping. The process of creating maps and assigning unique land parcel identifiers was described in Section E, Dynamic Property Maps and Unique Land Parcel Identifiers. The regional centre configuration required for property mapping is shown in Figure 29, page 214. It includes the following components:

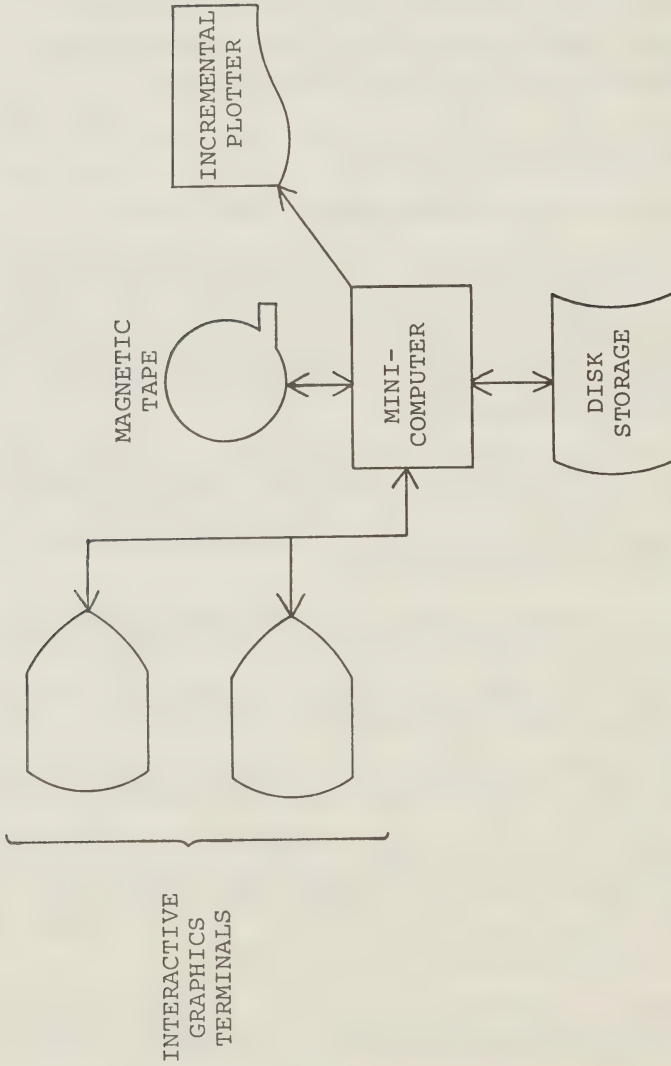
- one or more interactive graphics terminals, for entering plan information and "fitting" land parcels;
- a magnetic tape drive, for storage of boundary and property map information;
- a disc storage device for temporary storage of boundary information during data capture and fitting;
- a small incremental plotter, to draw the sections of property maps being updated; and
- a minicomputer processor, for controlling all terminal functions, plotting and data file handling.

The function and use of each component can best be described by following a new plan from submission through to registration and updating of the property map. Initially, the plan is submitted to the regional centre for verifying the accuracy of calculations and plan data capture.

All boundary information (bearings, distances or coordinates) will be entered on the interactive graphics terminal keyboard. The minicomputer will perform all calculations and note any errors.

FIGURE 29

REGIONAL CENTRE
BASIC EQUIPMENT CONFIGURATION
FOR PROPERTY MAPPING



Next, any new land parcels or boundary lines must be fitted into the existing property map base. The block or blocks affected would be retrieved from the property map tape master file and stored temporarily on disc. Reference ties shown on the plan would be compared to the base map information. New land parcels or boundary lines would be fitted into the existing base map. To do this, the interactive graphics terminals would be equipped with a light pen or "joy stick", allowing the terminal operator to easily interact with the map images presented on the graphics terminal display screen.

After the plan information has been rubberized to fit the existing base map, block parcel identifiers must be assigned for any new land parcels. The next available parcel number within a property map block would be assigned by the mini-computer. The new land parcel identifiers and updated property map information would be stored in a temporary or "holding" file. Since the plan has not yet been registered, final updating of the property map and assignment of parcel identifiers cannot take place.

A list of the errors discovered during plan calculation and fitting and a list of the land parcel identifiers intended to be assigned will be returned to the local office. The error list will be used by the local office in plan examination. The list of intended land parcel identifiers will be used to describe new land parcels after plan registration.

Registration of the plan in the local office will allow final updating of property map information. The regional centre will receive a copy of the registered plan for microfilming. The plan will also be used to finalize property map update. Any changes in the plan to correct errors found during plan calculation and fitting would be entered on the interactive graphics terminal keyboard. This would finalize the information stored in the temporary holding file created during initial plan calculation and fitting. Using the joy stick or light pen, the operator will select the appropriate centre of each new land parcel. The coordinate values for the selected geocentre would then be automatically generated by the minicomputer.

A hard copy of the new property map information will then be produced on the incremental plotter. This hard copy will be of relatively low quality. It will be used only to update the master property map maintained in the regional centre. Typically, it will include only a few land parcels and will be inserted into the master map. The new master property map will be microfilmed, jacketed and filed as the current property map for that block. The microfilm copy of the previous map would be filed as an historical record.

Similarly, the property map information contained within the holding file would replace the information for the parcels affected on the property map master tape file. The property map master tape file would, therefore, always contain a current record for all properties within the regional centre's jurisdiction.

Periodically, the local office will require up-to-date paper copies of the current property map. These would be produced from the current microfilm record in the regional centre. They would be used in the local office to satisfy user requests or to replace the office property map. Interim changes to the office property map would be in the form of pencilled additions by the local office staff.

After a number of updates or insertions into the regional centre master property map, it will also need replacement. The replacement master property map will be produced using a high quality plotter and stable base materials. High quality plotting capability will be provided at one location. Whenever a new master map is required, the regional centre would simply extract the property map information from the tape master file. A magnetic tape containing the information for the property map master required would be sent to this facility for preparation of a new master map. Upon return of the new property map master, it would be microfilmed, jacketed and filed for future use.

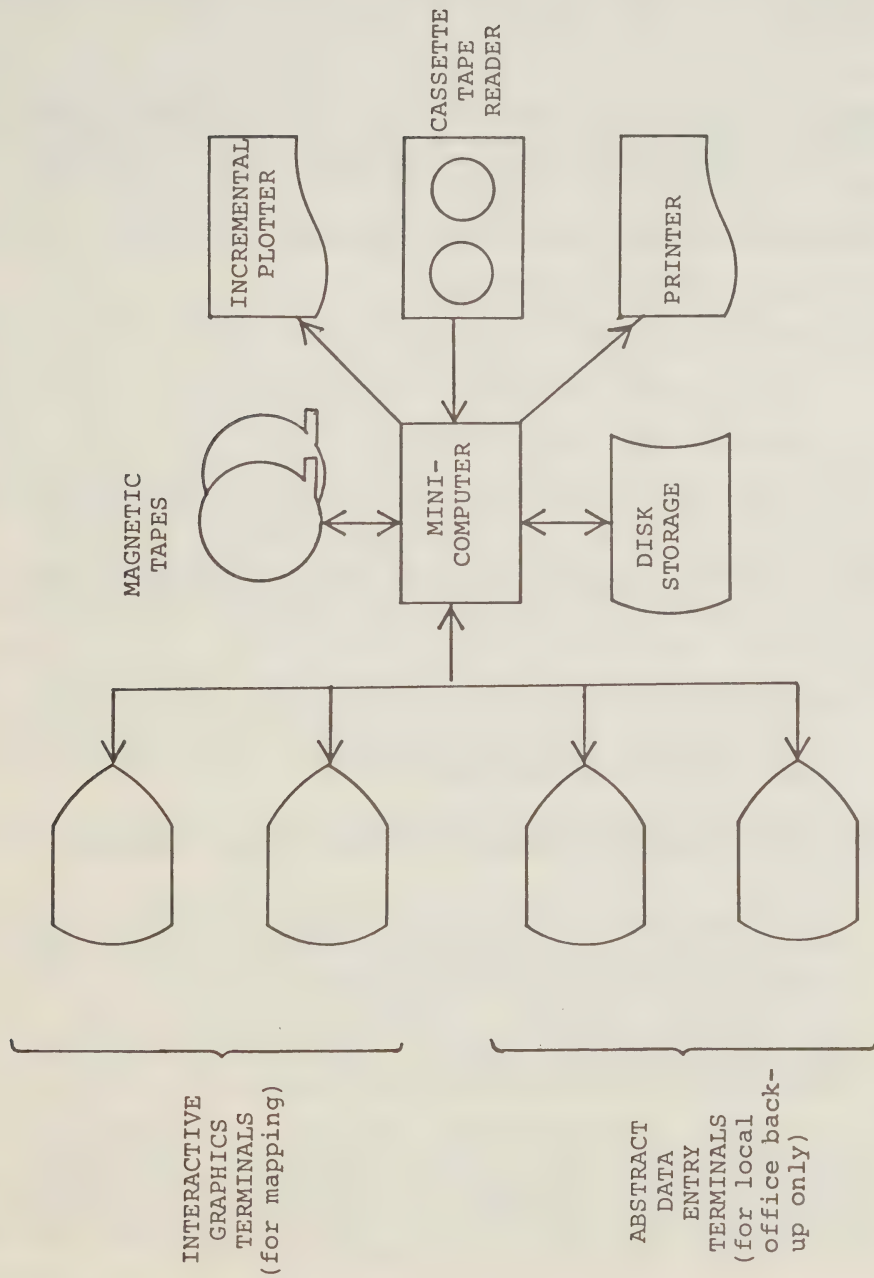
Each regional centre will have the same basic configuration. However, the number of interactive graphics terminals will depend upon the volume of plans that are processed during any given time period. One or two interactive graphics terminals in each regional centre will be sufficient to handle the anticipated workload.

The cassettes from the local offices provide the regional centre with a complete record of the activity in each local office each day. Therefore, the regional centre could easily produce activity reports for each office it serves. These would be the equivalent of the existing weekly activity and monthly, quarterly and annual reports.

To support this reporting function, the equipment configuration (Figure 30, page 217) requires addition of the following components to the basic property mapping configuration:

- a cassette reader, for reading magnetic tape cassettes prepared in the local offices;
- a printer, for preparing reports as required; and
- a second magnetic tape drive, for storage of index record information.

REGIONAL CENTRE
EQUIPMENT CONFIGURATION
WITH ACTIVITY REPORTING CAPABILITY



The local office information also includes all abstract entries. Therefore, the regional centre system can also process index records. Alternately, this information could be forwarded to a central computer and index records processed centrally.

The property mapping minicomputer would be used for processing index records on a regional basis. A more powerful computer configuration would be required for centralized processing. The large main frame computers at a government computing centre would be used in this case.

Processing of index records can provide:

- cross-reference indexes;
- regional searching capability;
- printed index records; and
- management and user reports.

For the most part, system information will be organized by block parcel identifier. However, users will want to be able to determine block parcel numbers using any one of several common identifiers such as owner names and street addresses. Cross-reference indexes will allow information to be obtained from the system in a number of convenient ways.

At least three cross-reference indexes will be produced:

- a land owner cross-reference index, linking owner names to block parcel numbers;
- a street address cross-reference index, linking street names and numbers to block parcel numbers; and
- a current parcel identifier (lot and plan/concession) cross-reference index, linking existing parcel names and numbers to block parcel numbers.

This information would be first captured as part of the initial property mapping process. Subsequently, it would be maintained as data is captured from the cover pages.

The land owner cross-reference index links individual owner names to specific block parcel numbers. Many land owners have similar names. Additional information will be required to allow specific identification of individuals. Therefore, such information as owners' birth dates and mailing addresses should also be included as it becomes available.

The land owner cross-reference index will be used extensively in the local offices. On a provincial or regional basis, judgement creditors will use the index to identify the land holdings of judgement debtors. This will require an enquiry capability in the local office to a regional centre or to a central computer facility.

The street address cross-reference index will provide a simple means of identifying block parcel numbers from street addresses. To prepare an initial index, the required information must be obtained from municipal files. This should be done during the property mapping process. Information to maintain this cross-reference index will also be captured from document cover pages.

The current parcel identifier cross-reference index simplifies the transition to the use of a block parcel identifier. It is unrealistic to expect users to convert their existing records immediately to the block parcel number system. A cross-reference from old to new identifiers will be required. Again, this cross-reference information will be captured during preparation of the initial property maps. Eventually, all active documents will contain the block parcel identifier. This cross-reference index will then be used only for historical searching.

The configuration shown in Figure 30, page 217, provides the capability required to produce the cross-reference indexes.

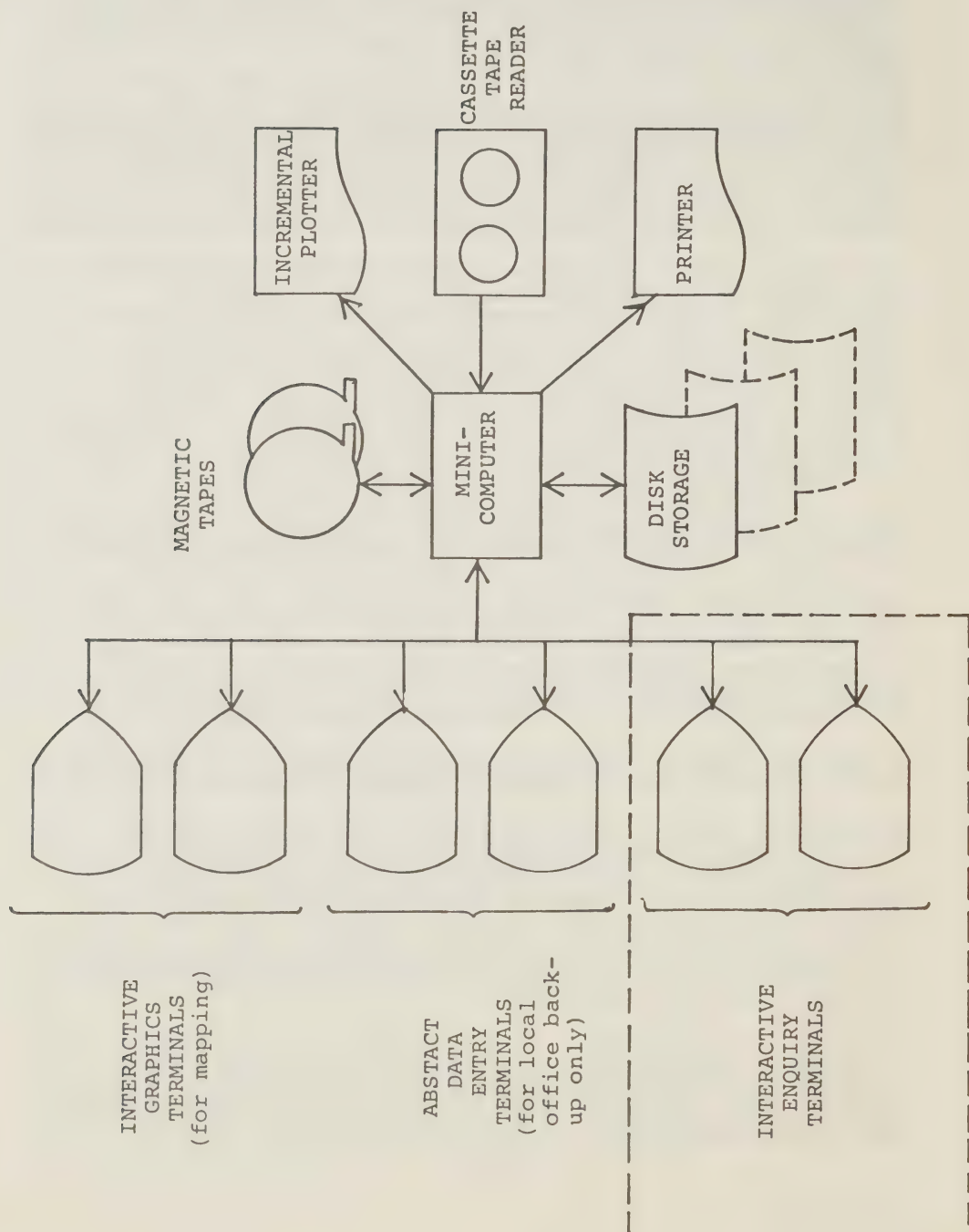
Cross-reference indexes would be provided to local offices on a periodic basis. It is expected that a monthly update and yearly consolidation will be adequate. The percentage of land parcels for which changes occur between monthly updates is minimal. If necessary, current information can be obtained directly from the local office files.

A regional enquiry capability could be added to the equipment configuration. This is shown in Figure 31, page 220.

Interactive enquiry terminals and additional disc storage could be added to the basic configuration. Here, the cross-reference indexes would be maintained on magnetic disc. Interactive enquiry terminals would be used to access information directly from disc storage. Immediate response to requests would be possible. The required information could also be provided in printed form. The information would be printed on the high-speed line printer and left for pick-up or mailed.

A telephone service utilizing interactive enquiry terminals would be of greatest benefit to judgement creditors. It can also satisfy the requirements of bulk users having immediate need for information.

REGIONAL CENTRE
EQUIPMENT CONFIGURATION
WITH ENQUIRY CAPABILITY



Response can also be provided without on-line enquiry terminals. On an overnight basis, the information contained in magnetic tape files would be scanned and the required reports produced on the line printer.

Providing information on an overnight rather than immediate basis is considered acceptable. Therefore, the interactive enquiry terminals have been shown as an optional rather than required configuration. This option should be considered when user request volumes and response requirements warrant.

To be useful, index records must contain all information currently affecting each land parcel. The index must, therefore, show:

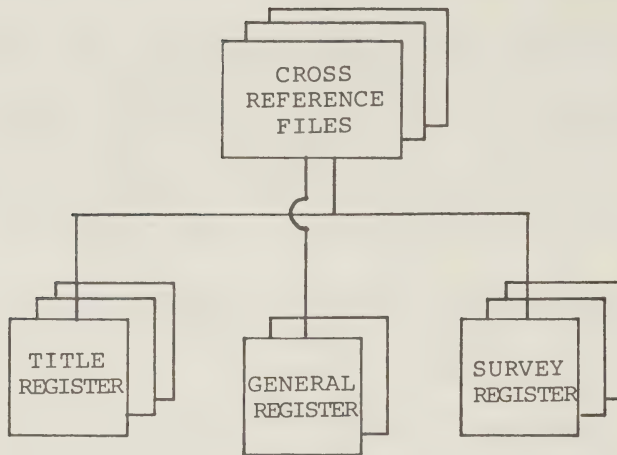
- for the land titles system, each active entry; and
- for the registry system, each entry affecting title for at least 40 years.

A new index record must be produced each time a document or plan affecting a land parcel is registered. It should also be produced to delete a formerly active entry which has expired. This will require storage and retrieval of all entries affecting a land parcel. An historical record must be maintained. The configuration shown in Figure 31, page 220, provides the needed capability.

As well as maintaining the cross-references, this index record information will be used to produce:

- a title register, containing information abstracted from registered documents related to specific land parcels;
- a survey register, containing information abstracted from registered plans and other survey documentation; and
- a general register, containing information abstracted from registered documents (such as wills) not related to specific land parcels.

The logical organization of this information is shown in Figure 32, page 222. Both the title register and survey register will be parcelized. Information will be organized by registration number under a block parcel number. The general register will contain information which is not directly related to specific land parcels. It cannot be logically organized by block parcel number. It will be organized by document registration number only.

LOGICAL ORGANIZATION OF INFORMATION

TITLE REGISTER:

- one record per abstract entry (document)
- organized by block parcel number and document registration number

SURVEY REGISTER:

- one record per abstract entry (plan)
- organized by block parcel number and plan registration number

GENERAL REGISTER:

- one record per abstract entry
- organized by registration number only

To be as current as possible, information should be updated daily. Therefore, information captured from documents and plans should be forwarded daily to the regional centre. With daily information, overnight updating of magnetic tape files and production of index records will be possible. The index records can then be mailed or delivered to the local offices by courier.

The type and extent of reporting possible for both management and users varies with the amount of information maintained in the computer. Useful management reports could be prepared with basic information. As more information is maintained, a broader range of reports becomes possible.

Automatic generation of reports for managements and outside users will be an important function of the computer systems. These could be provided on a scheduled or demand basis. Demand reporting allows monitoring of activity and performance as required. It would no longer be necessary to wait for preparation of a scheduled report.

Information abstracted from registered documents and plans will be available on a regular, as well as on a request basis, to both the system and outside users. Agencies such as the Ministry of Revenue and the Ontario Real Estate Board require abstracted information from property transaction documents. The system will be capable of providing reports containing information tailored to specific user requirements. It could be provided in hard copy or machine-readable form. Any agency operating a computerized system could obtain information in a machine-to-machine mode.

Automatic generation of reports will result in significant clerical time and cost savings in the local offices. Similarly, other agencies will eliminate the clerical time and cost of reviewing documents and extracting information.

The system will be capable of preparing ad hoc reports for management and outside users. The impact of this new capability is difficult to assess. It is extremely difficult to prepare comprehensive ad hoc reports in the current system. A demand is known to exist, but its extent is unknown. With the computerized system, ad hoc reporting will become possible. The frequency of requests for information will escalate over time. Evolution into a comprehensive land data base is possible.

Of course, if regional, rather than central processing is selected, the above functions would be carried out by nine regional computers rather than one centralized system.

As with the local office systems and procedures, all regional centre activities are within the capabilities of existing equipment and properly trained staff.

L. CENTRAL SYSTEMS AND PROCEDURES

Head office will retain responsibility for the overall operation of an improved land registration system. Central administrative and support functions will remain relatively unchanged from the present system. These continuing activities and responsibilities include:

- administration of the land registration system;
- training and monitoring staff; and
- provision of support services to the local offices.

The development activities for implementation of improvements will also be conducted centrally. Development, pilot project testing and implementation require centralized control and monitoring. This is especially true for the introduction of computers for:

- preparation of the initial property maps; and
- processing of index (cover page) records.

A large minicomputer configuration for property mapping will be installed centrally. It will be similar to regional centre systems (and may serve as one of them) but will include a two-dimensional digitizer and a flat bed plotter. This configuration is shown in Figure 33, page 225. It will be used for:

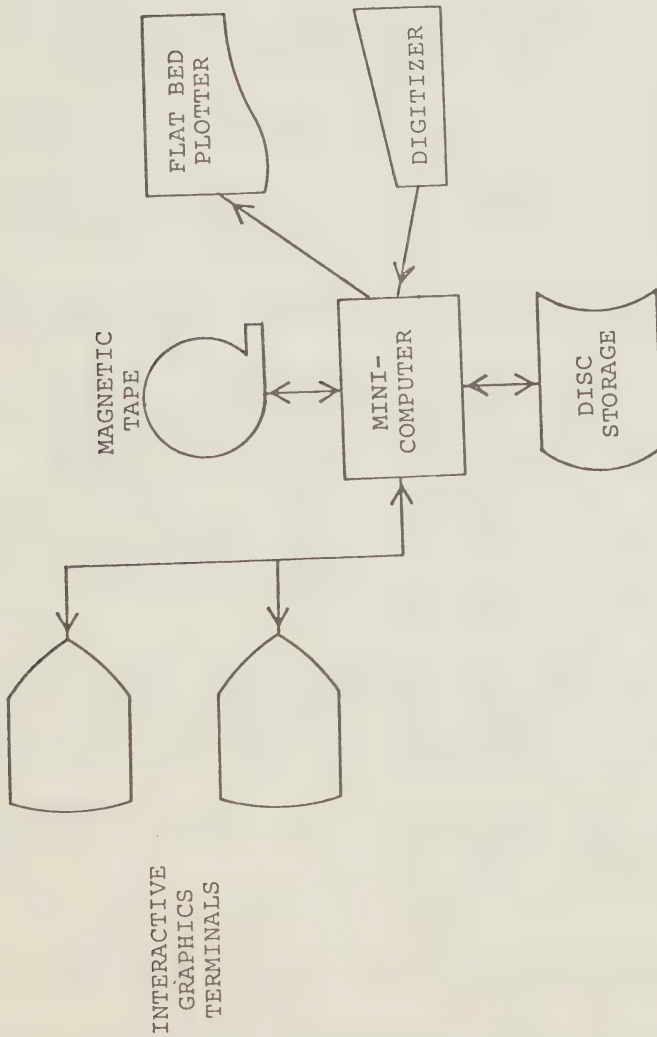
- experimenting with mapping and conversion techniques;
- developing production systems for generating and maintaining property maps;
- monitoring regional centre activities; and
- generating initial property maps.

Generation of initial property maps requires capture and manipulation of large amounts of boundary data. It also requires boundary data to be fitted into the overall provincial boundary framework. These functions can best be performed at a central location.

As a first step, the central system will be used to establish provincial, county, office and block boundaries. Land parcel boundary data from existing survey plans and maps will then be captured on the digitizer for high speed data capture. Using interactive graphics terminals, each land parcel will be fitted into its block framework. This results in a magnetic tape file containing initial property maps for each block in an office. A hard copy initial property map will be produced on the precision, flat bed plotter. Purchased services for digitizing and plotting could be used where volume or economics dictate the necessity.

FIGURE 33

CENTRAL OFFICE
BASIC EQUIPMENT CONFIGURATION
FOR PROPERTY MAPPING



When initial property maps for an office are complete, a copy of the property map magnetic tape files and hard copy maps will be sent to the regional centre. Responsibility for updating the property maps will rest with each regional centre. As property maps are updated in the regional centre, the initial property map data will change. These changes will be supplied, by the regional centre, to the central site. This results in maintenance of duplicate property map information (a Provincial boundary register) centrally. This has a number of advantages:

- it provides back-up for any regional office and thus minimizes delays due to system breakdown;
- it provides the capability for monitoring property map production and maintenance on an on-going basis;
- it allows a centralized approach to incorporation of new developments in technology and, therefore, helps ensure standard procedures common to all regional map maintenance operations; and
- it allows centralized staff to support each regional centre in resolving difficult mapping problems.

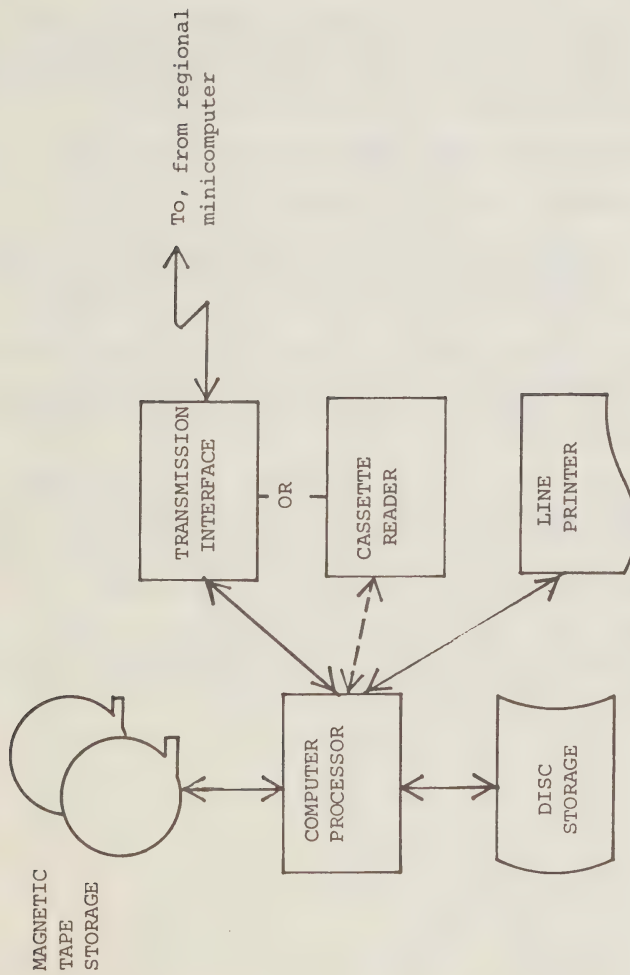
Because of its size and capabilities, this central minicomputer system could easily serve as a regional centre system in addition to performing the functions outlined above. It could then become both a development and production system.

This, and the discussion in the previous section, assumed that index record processing would be done by the regional systems. It could also be done by a single large computer system. It is expected that one of the large government computing centres would be used in this case.

Abstract entries would be forwarded to the central computer by local offices or regional centres. Either the cassettes would be forwarded or the information transmitted directly from computer to computer. The basic equipment configuration required is shown in Figure 34A, page 227. It includes:

- a transmission interface, to receive information from and pass information to the regional minicomputer or a cassette tape reader;
- a high speed printer, for producing hard copy reports;
- magnetic disc storage, for holding information on a temporary basis;
- magnetic tape storage, which serves as the primary information storage medium; and
- a computer processor for manipulating information and controlling all other devices.

BASIC COMPUTER CENTRE EQUIPMENT CONFIGURATION
FOR INDEX RECORD PROCESSING



An enquiry capability similar to that described in Section K, Regional Centre Systems and Procedures, could be added to the central computing centre equipment configuration. This would provide a province-wide search capability at one location for judgement creditors and bulk users.

One further expansion of the equipment configuration may become desirable. The index records could be produced centrally on microfiche. Provision of microfiche index records increases the equipment configuration (see Figure 34B, page 229) by adding:

- additional magnetic tape storage capability; and
- a computer output microfilm (COM) unit.

As with regional information, central information should be updated daily. Magnetic tape files should be updated and microfiche index records produced on an overnight basis.

The introduction of COM capability also allows cross-reference indexes to be produced on microfiche rather than paper. A standard 4-inch by 6-inch microfiche format would be used for all index and cross-reference files in the local office.

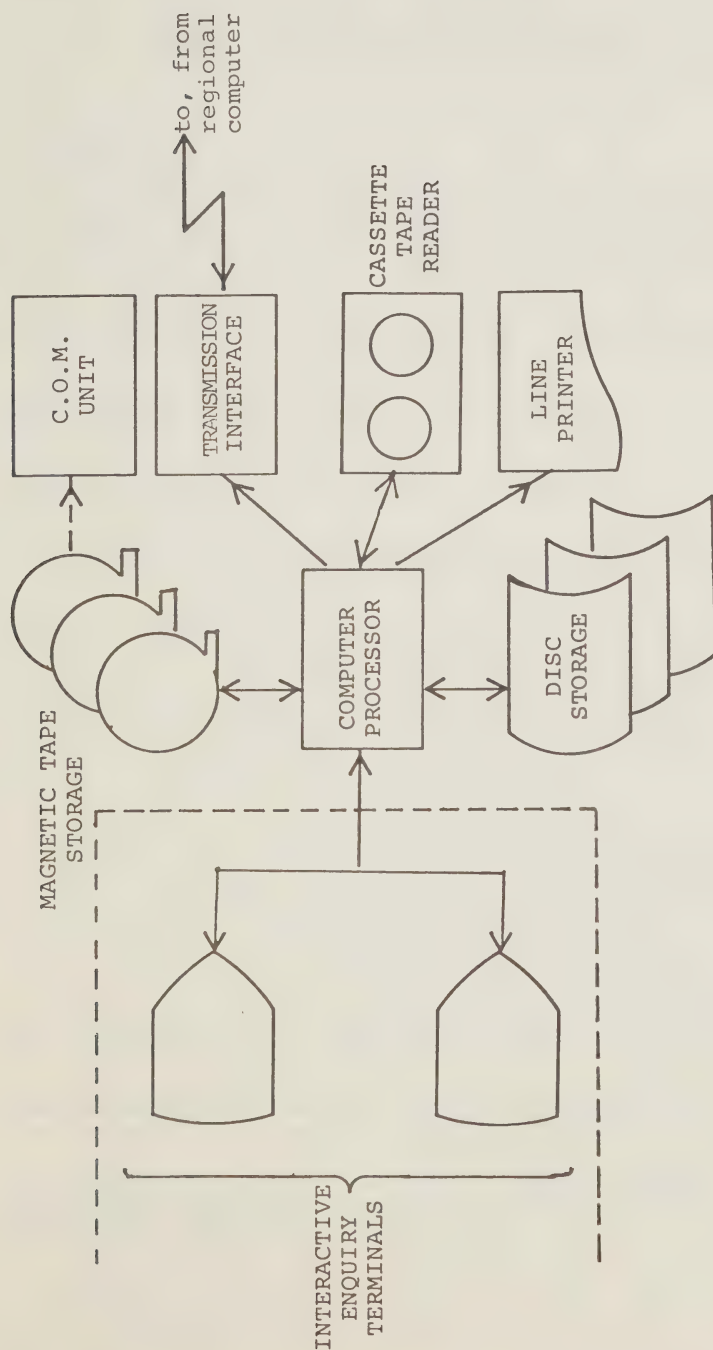
COM index production can also be obtained as a purchased service. In this case, magnetic tapes containing information to be produced on microfiche would be provided to the COM supplier. Economic and timing considerations will dictate the choice of government or purchased COM services.

Similarly, a choice of one centralized computer or nine regional computers for index record processing must be made. These options are analyzed further in Chapter IX as part of the cost/benefit evaluation.

FIGURE 34B

COMPUTING CENTRE EQUIPMENT CONFIGURATION

INCLUDING COM AND ENQUIRY CAPABILITIES



IX

COST BENEFIT ANALYSIS OF SYSTEM IMPROVEMENT ALTERNATIVES

A. INTRODUCTION

Prior Chapters defined the policy, service and system considerations related to improvement of the Province's land registration system. The costs, and associated benefits, of each potential improvement are analyzed in this Chapter.

Many of the improvements are interdependent. For example, local office cash register data capture requires both:

- a cover page developed and introduced in conjunction with standardized shorter documents; and
- unique land parcel identifiers provided as part of property map preparation.

The relationships between potential system improvements are shown on Figure 35, page 231, System Improvement Dependencies.

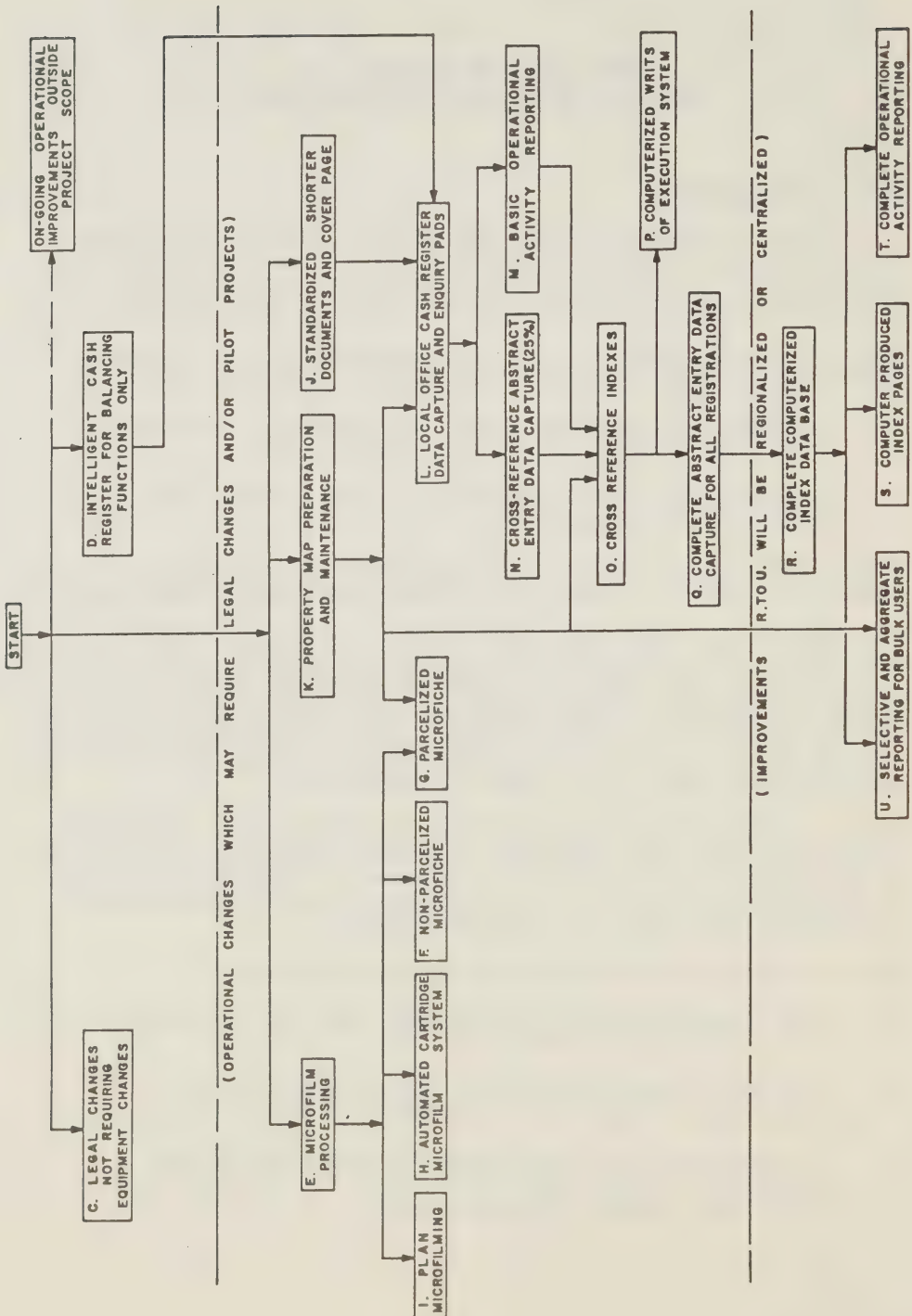
The dependency chart has been divided into three sections. The upper section indicates changes not requiring major operational revisions. The remainder illustrates operational changes which may require a corresponding legal change and/or testing of the change in a pilot project. The extreme lower portion of the chart indicates improvements which could be introduced using either regional or central computers.

Pilot projects are used to reduce uncertainties. Estimated costs, benefits and operating characteristics are verified in a small scale, controllable environment. With satisfactory pilot project results, an improvement could be implemented throughout the land registration system.

The remaining sections of this Chapter discuss:

- the assumptions and methodology used for developing cost and benefit estimates;
- the costs benefit analysis for each potential improvement shown on the dependency chart; and
- a summary of costs and benefits identifying the preferred system improvements and the sequence in which they should be implemented.

SYSTEM IMPROVEMENT DEPENDENCIES



B. ASSUMPTIONS AND BASIC FACTORS USED IN DEVELOPING ESTIMATES

Cost and benefit estimates were developed using a standard approach. Manufacturers' published price lists were used for equipment purchase, equipment maintenance and supplies costs. Provincial standard rates were used for staff and space costs. Standard Ministry statistics and the experience of senior staff were used for processing volumes and clerical times.

Improvements may produce either tangible or intangible benefits for:

- the land registration system;
- other government agencies; or
- land registration system users.

Wherever possible, savings have been quantified. Displaced costs or easily obtainable savings have been taken at full value. Some savings are not easily identifiable. Others require a re-organization of duties to eliminate a full complement position. The full value of the benefit may not be obtained. However, it is reasonable to expect that at least some portion of the saving will be realized. In this case, the value of the saving has been discounted. For example, time savings have been applied against registration volume on an office-by-office basis in order to determine reductions in the number of full complement positions. This method of discounting has been used wherever appropriate to determine benefits which can realistically be achieved.

The following estimates and assumptions have been used for development of the cost benefit analysis:

1. General Assumptions

- The number of documents being registered will continue to increase at an annual compounded rate of 5%. This has been the average rate of increase from 1968 to 1976.
- All costs are calculated in 1977 dollars with no provision for inflation. Equipment costs exclude Federal sales tax and, with some major exceptions, Provincial sales tax.
- Overhead factors such as administration, fringe benefits and the cost of space have not been included in the detailed cost/benefit analysis pages. An overall factor for fringe benefits has been applied to the total cost (or benefit) of the improvements recommended for implementation.

- The majority of positions will be staffed by Ministry personnel. Costs have been developed on this basis.

2. Documents and Plans

Figures show times in the present systems as derived from the staffing rationale, followed by assumed times (incremental) when the indicated improvements are implemented.

File and Retrieve:	Documents	- 2 minutes	(present)
	Plans	- 1½ minutes	(present)
	Microfilm documents and plans	- 1 minute	(pull, copy and re-file)
Examination:	For completion	- 7.8 minutes	(present)
		- 6.8 minutes	(unique identifier)
		- 5.5 minutes	(cover page)
	For legal effectiveness (land titles only)		
		- 9.1 minutes	(present)
		- 8.1 minutes	(cover page)
Abstracting:	Registry	- 10 minutes	(present)
		- 9 minutes	(unique identifier)
		- 8 minutes	(cover page)
	Land Titles	- 17 minutes	(present)
		- 16 minutes	(unique identifier)
		- 15 minutes	(cover page)
Average number of pages per document	- 5 pages	(present)	
	- 2 pages	(cover page)	
Document preparation time	- 30 minutes	(present)	
	- 25 minutes	(unique identifier)	
	- 15 minutes	(cover page)	

3. Searching

Document examination time	- 5 minutes/document	(present)
	- 3½ minutes/document	(cover page)
Total search time:	Land Titles	- 1½ hours (present)
	Registry	- 4 hours (present)

Number of documents pulled and examined during full search:

Land Titles - 4 (present)
Registry - 20 (present)

Number of searches: 60% of registration volume

Number of full searches: $\frac{1}{2}$ of total searches = 30% of registration volume

Full searches: Land Titles - 100,000
Registry - 250,000

Number of full registry searches which would be affected by plan certification program: $\frac{1}{2}$ of full searches = 15% of registration volume

4. Fee and Receiving Book

Time required per entry - description 80 seconds
- amounts 30 seconds
- balancing 20 seconds

Time to perform subsearch - 5 minutes average (present)
- only required for 30% of registration volume.

5. Determination of Parcel Identifier

Time to obtain identifier - 10 minutes (present)
- only required for 10% of search volume

6. Writs of Execution

Time to perform search - 5 minutes (present)
- only performed for 50% of land titles registrations

7. Activity Reporting

For internal and other government agencies - 2.6 minutes/
registration
(present)

8. Land Parcels

3,100,000 land parcels in the Province:

- 70% in the registry system
- 30% in the land titles system

107,647 new parcels created (1976):

- includes condominium units
- does not include parcels created by written descriptions (assumed additional 8%)

9. External Rates

(a) Contract Systems Staff

Project Leader	- \$6,000/month
Senior Analyst	- \$5,000/month
Intermediate Analyst	- \$4,500/month
Programmer Analyst	- \$4,000/month

(b) Legal Time

Searching \$10.00 per hour
Document preparation \$10.00 per hour

Internal Staff Rates

(a) Survey Basic

LSE4 Surveyor	\$2,200/month
LSE2 Technologist	1,800/month
DR2 Survey Technician	1,250/month
DR1 Technician	1,000/month

(b) Systems

Senior Analyst	\$2,500/month
Intermediate Analyst	2,250/month
Program Analyst	2,000/month

(c) Legal

Lawyer	\$3,000/month
Legal Support	1,125/month
Searcher	1,500/month

(d) Clerical

Clerk (CL4)	1,000/month
General Clerical Rate	\$5.00/hour

(e) Standard Day

Duration - 7½ hours
Productive - 6 hours

10. Hardware and Software

- (i) All operator training provided by supplier as part of equipment purchase.
- (ii) Equipment maintenance @ 5% of purchase cost unless specifically known.
- (iii) Software maintenance @ 10% of system development cost.

11. Document Registrations

<u>Year</u>	<u>Total</u>	<u>Approximately</u>
1976	1,137,200*	1,100,000
1977	1,194,100	1,200,000
1978	1,253,800	1,300,000
1979	1,316,500	1,300,000
1980	1,382,300	1,400,000
1981	1,451,400	1,500,000
1982	1,524,000	1,500,000
1983	1,600,200	1,600,000
1984	1,680,200	1,700,000
1985	1,764,200	1,800,000
1986	1,852,400	1,900,000
1987	1,945,000	2,000,000

*From 1974/75/76 Report of the Director of Land Registration. 1977 and subsequent years obtained assuming 5% annual increase (compounded).

C. LEGAL CHANGES NOT REQUIRING EQUIPMENT CHANGES

A number of legal concepts that govern the land registration system can be improved. Revision of the Acts or legislation is required. Major change to system equipment is not.

These changes include:

- amendments to The Registry Act to reduce the required search period and give immediate effect to discharges and expired interests;
- improved certification of titles legislation for the registry system;
- amendments to provide a more complete title record through registration of government liens and municipal clearance violations and removal of the title effect of Planning Act violations;

- clarification and improvement of the rules regarding title assurance, boundary assurance, adverse possession and compensation;
- selected changes to the law governing covenants and easements; and
- selected improvements to the provisions of The Land Titles Act governing cautions, notices and leases.

The majority of the legislation affected is administered by the Division. Where legislation is administered by another Ministry, time for the required liaison has been included in the estimate of development costs.

The implementation cost is incurred solely as a result of certification of registered plans. This is a worst-case cost. The actual cost should be less due to:

- the number of registrar's abstracts and other searches available;
- development of shorter search procedures; and
- development of "production line" efficiency of the certification staff.

There would be no appreciable increase in operating costs with implementation of these improvements. Some increase in registration volume may result from registration of government liens and municipal clearance violations.

The potential system benefits are realized primarily through reduction in the number of documents which must be drawn and re-filed per search. About 75% of the clerical time saved should be realized in practice.

Four years will be required to complete the certification of plans program. However, all other benefits will be realized immediately upon implementation. The benefit stream should be delayed a maximum of one year. This leads to a pay-back period of less than three years for implementation of this improvement.

Other government agencies and system users will benefit greatly from these changes. At a cost of \$10.00 per hour for searching, system users (including other government agencies) could potentially reduce their costs by \$5,250,000 annually.

LEGAL CHANGES NOT REQUIRING EQUIPMENT CHANGES

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	105,000	Ø	105,000	
Pilot Project Testing	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Sub-Total	105,000	Ø	105,000	
Implementation	<u>528,000</u>	<u>Ø</u>	<u>528,000</u>	
Total One-time Costs	633,000	Ø	633,000	<u><u>633,000</u></u> (A)

2. On-going Costs and Benefits (yearly)

Operating Costs	Ø	Ø	Ø	
Potential Benefits	480,000	Ø	480,000	
Realizable Benefits	<u>360,000</u>	<u>Ø</u>	<u>360,000</u>	
Net Benefit (Cost)	360,000	Ø	360,000	<u><u>360,000</u></u> (B)

3. Payback Period (A ÷ B) (Years)

<u>633,000</u>	÷	<u>360,000</u>	=	<u>1.8</u>	+	Delay	<u>1</u>	<div>2.8</div>
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B. OTHER GOVERNMENT AGENCIES

Statistics regarding the number of searches and documents registered by other Government agencies could not be isolated from those of general users. Therefore, savings are incorporated in "system users" benefits below.

C. SYSTEM USERS

Potential savings of \$5,250,000 annually based on reduced registry system search times. Savings result from a reduction of the number of documents to be examined as a result of two improvements:

- reducing the search period and giving immediate effect to discharges and expired interests - \$4,500,000
- certification of registered plans - 750,000

Total \$5,250,000

D. NOTES AND INTANGIBLE BENEFITS

D. INTELLIGENT CASH REGISTER FOR BALANCING FUNCTIONS ONLY

At least one cash register is used in each land registry office throughout the Province. From time to time, replacement cash registers must be purchased. There are two options for purchase of replacement cash registers:

- the cash register could be suitable for performing today's functions only; or
- the cash register could be suitable for expansion into a computerized local office configuration.

Purchase of an "intelligent" cash register will be required to support data capture and enquiry pads in the local office. A "non-intelligent" cash register could not be used in a computerized office and would become obsolete with introduction of local office data capture and enquiry pads.

Development of balancing procedures for an intelligent cash register are estimated at two man-months of intermediate analyst time. Implementation is relatively straight-forward. One day's training in each office should be adequate.

The difference in cost between intelligent and non-intelligent cash registers is \$2,200. Some offices have multiple cash registers. A total of 75 cash registers would be required across the Province. This leads to a total one-time cost of \$165,000 for intelligent rather than standard cash registers.

On-going operating costs are essentially the maintenance costs for servicing the new cash registers. This is reduced by the savings in maintenance on existing cash registers.

A potential staff time saving in fee book balancing has been calculated. However, this does not amount to the saving of a full position in even the largest offices. Therefore, there is no realizable staff benefit.

Since there is a net additional cost yearly, there is no pay-back period for implementation of this improvement. It cannot be justified on its own merit. However, it will be required for implementation of a computerized local office system.

INTELLIGENT CASH REGISTER FOR BALANCING FUNCTIONS ONLY

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	4,500	Ø	4,500	
Pilot Project Testing	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Sub-Total	4,500	Ø	4,500	
Implementation	<u>6,500</u>	<u>165,000</u>	<u>171,500</u>	
Total One-time Costs	11,000	165,000	176,000	<u>176,000 (A)</u>

2. On-going Costs and Benefits (yearly)

Operating Costs	Ø	20,250	20,250	
Potential Benefits	30,000	11,250	41,250	
Realizable Benefits	<u>Ø</u>	<u>11,250</u>	<u>11,250</u>	
Net Benefit (Cost)	Ø	(9,000)	(9,000)	<u>(9,000) (B)</u>

3. Payback Period (A ÷ B) (Years)

 ÷ = + Delay

NIL

B. OTHER GOVERNMENT AGENCIES

NIL

C. SYSTEM USERS

NIL

D. NOTES AND INTANGIBLE BENEFITS

There is a time saving from automation of office balancing procedures. This does not amount to a full complement position in any one office.

E. MICROFILM PROCESSING

Microfilm processing is currently performed at the Hamilton office. Under the regional centre concept, up to eight additional microfilm processing centres would be established.

No development or pilot project costs would be required. Microfilm processing procedures and techniques are well established in the existing Hamilton operation. Implementation cost is composed of a small amount of regional staff training and the purchase of the required microfilm processing and duplicating equipment for eight regional centres.

On-going operation of the equipment requires very little staff time. The primary operating expenses are associated with equipment maintenance and supplies. Since Hamilton currently processes microfilm for the entire system, supplies costs in the regional centres would be off-set by the reduction in supplies costs in the Hamilton office.

At this stage, the microfilm would be used for archival purposes only. As such, there are no potential or realizable benefits. Therefore, implementation of microfilm processing in each regional centre would result in a net cost increase.

Regional microfilm processing is common to all the document and plan microfilm storage options. These additional costs must be considered when analyzing these options. The document microfilm options are intended to be mutually exclusive. All offices would use:

- non-parcelized document microfiche;
- parcelized document microfiche; or
- automated cartridge microfilm.

MICROFILM PROCESSING

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	Ø	Ø	Ø	
Pilot Project Testing	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Sub-Total	Ø	Ø	Ø	
Implementation	<u>2,800</u>	<u>135,200</u>	<u>138,000</u>	
Total One-time Costs	2,800	135,200	138,000	<u>138,000 (A)</u>

2. On-going Costs and Benefits (yearly)

Operating Costs	Ø	6,760	6,760	
Potential Benefits	Ø	Ø	Ø	
Realizable Benefits	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Net Benefit (Cost)	Ø	(6,760)	(6,760)	<u>(6,760) (B)</u>

3. Payback Period (A ÷ B) (Years)

- ÷ - = - + Delay -

NIL

B. OTHER GOVERNMENT AGENCIES

NIL

C. SYSTEM USERS

NIL

D. NOTES AND INTANGIBLE BENEFITS

Microfilm used for archival purposes only. Essentially, the same process in 9 regional centres as is now done in Hamilton.

F. NON-PARCELIZED DOCUMENT MICROFICHE

Non-parcelized document microfilm jackets are used in the Toronto and York South office. In this option, a similar system would be extended to each office across the Province.

Development costs are associated with the legal changes and documentation necessary for province-wide implementation. Since this method is currently in operation in Toronto, no pilot project testing is envisaged.

Implementation of this option requires installation of microfilm jacketing equipment in each regional centre and microfiche handling equipment in each local office. It also requires the preparation of microfiche records for all existing documents in each office.

On-going costs for staff are primarily in the regional centre for jacketing of the microfilm. Other operating costs include equipment maintenance, supplies and courier service for transporting microfilm to the regional centre and microfiche records back to the local office.

The potential benefits in staffing result from reduced filing and retrieval times for microfiche as opposed to paper documents. Potential equipment savings result from two factors. The need to purchase additional filing cabinets for paper documents is eliminated. The floor space required for document storage is significantly reduced. However, because of varying conditions in office staffing, only about 50% of potential staffing benefits can be realized. The saving from elimination of filing cabinet purchase can be realized. The savings associated with floor space must be heavily discounted. This results in about one-third of the potential equipment benefit being realized.

The full benefit stream cannot be realized immediately. A delay factor of one year has been included to compensate for the time required to complete backlog microfilming and achieve a significant space saving. Under these conditions, a pay-back period of 19.1 years results with implementation of this improvement.

However, the costs associated with regional microfilm processing (Section E) must also be included. The additional \$138,000 in one-time costs and \$6,760 in yearly operating costs increases the pay-back period to 20.5 years.

Other benefits are obtained from implementation of a microfilm document system. The savings in floor space will postpone or eliminate the need to build new offices. System users will experience slightly faster service since microfilm copies can be retrieved, copied and re-filed faster than the paper documents. System security is greatly enhanced since original records will remain with the system and staff and only copies provided to the general public.

NON-PARCELIZED DOCUMENT MICROFICHE

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	30,500	Ø	30,500	
Pilot Project Testing	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Sub-Total	30,500	Ø	30,500	
Implementation	<u>1,858,190</u>	<u>1,668,750</u>	<u>3,526,940</u>	
Total One-time Costs	1,888,690	1,668,750	3,557,440	<u><u>3,557,440</u></u> (A)

2. On-going Costs and Benefits (yearly)

Operating Costs	20,035	65,650	85,685	
Potential Benefits	250,000	416,700	666,700	
Realizable Benefits	<u>125,000</u>	<u>156,870</u>	<u>281,870</u>	
Net Benefit (Cost)	104,965	91,220	196,185	<u><u>196,185</u></u> (B)

3. Payback Period (A ÷ B) (Years)

$$\underline{3,557,440} \div \underline{196,185} = \underline{18.1} + \text{Delay } \underline{1} \quad \boxed{19.1}$$

B. OTHER GOVERNMENT AGENCIES

Savings in floor space by removal of paper document filing can postpone the need to build new offices in some areas.

C. SYSTEM USERS

Somewhat faster search time.

D. NOTES AND INTANGIBLE BENEFITS

Improved system security.

G. PARCELIZED DOCUMENT MICROFICHE

With a parcelized document microfiche system, one or more microfilm jackets would contain all of the documents related to a specific land parcel.

This varies from the current system in the Toronto and York South office. Microfilm records would be filed by parcel rather than by registration number. This requires development of new legal procedures and documentation of different operating methods. It also requires pilot project testing. A three-month parallel test in one office has been allowed for verification of procedures and estimates.

Implementation requires installation of the necessary jacketing equipment in the regional centres and microfiche handling equipment in the local offices. It also requires backlog microfilming and jacketing of all documents existing within the system.

On-going operating costs are primarily for regional staff to jacket and file microfilm plus equipment maintenance and supplies costs. As with non-parcelized microfiche document records, the potential benefits arise from clerical time savings in filing and re-filing documents plus the savings possible from elimination of filing cabinet purchase and reduced floor space. Again, these have been discounted to arrive at the realizable benefits.

There are other benefits from implementation of this improvement. The need for new offices in some areas can be postponed or eliminated due to the saving in floor space by the removal of paper documents. There will be faster document retrieval service for system users. All documents for a land parcel will be available on one or several microfiche. This reduces waiting time during searching and would result in a realizable user benefit of about \$300,000 per year.

The on-going staff and equipment costs associated with this option are relatively high. Accordingly, this is a net cost change and there is no pay-back period. Based solely upon system savings, this option cannot be recommended. However, if realizable user benefits were also included, a pay-back period would result. In effect, this option involves high system cost for jacketing on a parcelized basis in order to provide a more useful service to the system user than the non-parcelized microfiche option.

PARCELIZED DOCUMENT MICROFICHE

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	37,250	Ø	37,250	
Pilot Project Testing	<u>9,750</u>	<u>16,500</u>	<u>26,250</u>	
Sub-Total	47,000	16,500	63,500	
Implementation	<u>2,078,190</u>	<u>3,137,050</u>	<u>5,215,240</u>	
Total One-time Costs	2,125,190	3,153,550	5,278,740	<u>5,278,740 (A)</u>

2. On-going Costs and Benefits (yearly)

Operating Costs	280,210	252,590	532,800	
Potential Benefits	321,000	414,320	735,320	
Realizable Benefits	<u>160,500</u>	<u>156,630</u>	<u>317,130</u>	
Net Benefit (Cost)	(119,710)	(95,960)	(215,670)	<u>(215,670) (B)</u>

3. Payback Period (A ÷ B) (Years)

 ÷ = + Delay

NIL

B. OTHER GOVERNMENT AGENCIES

Need to build new offices postponed.

C. SYSTEM USERS

Faster document retrieval service. All documents for a parcel will be available on one or several fiche. This will reduce overall search time significantly.

D. NOTES AND INTANGIBLE BENEFITS

Improved system security.

H. AUTOMATED CARTRIDGE MICROFILM SYSTEM

The third option for microfilm document files is the use of roll microfilm in registration number sequence. As in non-parcelized microfiche, roll microfilm is currently in use in the Toronto and York South offices.

This improvement utilizes self-loading microfilm cartridges rather than manual loading roll film. In addition, the approximate location of registered documents would be indexed on the cartridge by position counter (odometer) reading. This would allow the system user to quickly locate the section containing the required document on the microfilm itself.

In addition, each microfilm reader would be equipped to produce a paper copy of the microfilm image. The system user would not be required to examine microfilm images. Rather, he could obtain a paper copy of each document page required for his search.

Development costs are associated with the legal changes and documentation necessary for province-wide implementation. Since the operation is somewhat different from that in the Toronto office, a three-month parallel test in one office has been allowed for verification of procedures and estimates.

Implementation staff costs are primarily associated with backlog microfilming. The equipment costs are primarily for local office microfilm readers.

On-going staff costs are minimal. They result from the need to load and index microfilm cartridges. On-going equipment cost is primarily hardware maintenance. The cost for replacing worn out microfilm is considered to be insignificant.

The potential benefits in staffing result from elimination of the copying function and greatly reduced filing and retrieval time for cartridge microfilm as opposed to paper documents. Automated retrieval devices are available, but they are not cost justified at this time. However, giving users direct access to the document file should be considered. This will almost eliminate staff filing and retrieval.

As with the other document microfilm options, potential equipment savings result from two factors. The need to purchase additional filing cabinets for paper documents is eliminated. The floor space required for document filing is significantly reduced.

Again, because of varying conditions in office staffing, only about 50% of potential staffing benefits can be realized. The saving from elimination of filing cabinet purchase can be realized. The savings associated with floor space must be heavily discounted.

The full benefit stream cannot be realized immediately. A delay factor of one year has been included to compensate for the time required to complete backlog microfilming and achieve significant space saving. Under these conditions, a pay-back period of 9.7 years would result from implementation of this improvement.

However, the costs associated with regional microfilm processing (Section E) must also be included. The additional \$138,000 in one-time costs and \$6,760 in yearly operating costs increases the pay-back period to 10.4 years.

There are also benefits to government agencies and system users. The system user should realize some time-saving due to obtaining photocopies directly as part of the search procedure and document retrieval will be significantly faster.

A number of manufacturers are automating their cartridge microfilm readers. At a somewhat higher cost, automatic location of the specific document on a microfilm cartridge will be possible. This advance should be investigated further (in the detail design stage) if a cartridge microfilm system is selected.

AUTOMATED CARTRIDGE MICROFILM SYSTEM

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	30,500	Ø	30,500	
Pilot Project Testing	<u>9,750</u>	<u>Ø</u>	<u>9,750</u>	
Sub-Total	40,250	Ø	40,250	
Implementation	<u>1,284,410</u>	<u>1,207,020</u>	<u>2,491,430</u>	
Total One-time Costs	1,324,660	1,207,020	2,531,680	<u>2,531,680 (A)</u>

2. On-going Costs and Benefits (yearly)

Operating Costs	1,930	58,985	60,915	
Potential Benefits	418,000	401,700	819,700	
Realizable Benefits	<u>209,000</u>	<u>142,700</u>	<u>351,700</u>	
Net Benefit (Cost)	207,070	83,715	290,785	<u>290,785 (B)</u>

3. Payback Period (A ÷ B) (Years)

$$\frac{2,531,680}{290,785} = 8.7 + \text{Delay } 1$$

9.7

B. OTHER GOVERNMENT AGENCIES

Need to build new offices postponed.

C. SYSTEM USERS

Somewhat faster search time. Fast copying service.

D. NOTES AND INTANGIBLE BENEFITS

Improved system security.

I. PLAN MICROFILMING

Currently the system stores full size reproduceable original copies of plans. With plan microfilming, these will be replaced by 35 mm microfilm images of each plan or plan section. Jacketed microfilm would be used to produce paper or microfiche copies as required.

Development cost is primarily the legal and system effort required to establish microfilm standards for plan preparation. A pilot project would be used to verify the suitability of these standards. The low volume of plans allows processing at either the regional centres or the existing Hamilton centre. The cost figures provide for regional processing.

Implementation accordingly requires training of both local and regional centre staff. Thirty-five mm cameras, jacketing equipment and microfiche viewers, reader printers and storage units must be installed in each regional centre. Microfiche reader printers and storage units must be provided in the local offices. It also requires conversion of all existing plans to a microfilm format. Backlog microfilming of plans will cost about \$227,000.

On-going operating costs are primarily for supplies. On-going benefits result from the elimination of the need to buy new plan storage cabinets each year. This is a direct saving and is realized immediately upon implementation of plan microfilming. There is a corresponding reduction in the amount of office floor space required. However, since plans require much less floor space than documents, this is considered to be a negligible system benefit.

The pay-back period based solely upon system savings is 10.8 years. There are savings for systems users and other government agencies. These arise primarily from elimination of the need to store permanent original copies of plans. Preparation of plans in ink on linen could be discontinued. This leads to savings in both plan material and preparation cost. The material cost saving based upon 25,000 plans per year entering the system would be about \$50,000. The use of relatively inexpensive automated drafting methods also becomes practical and would reduce plan preparation costs for the user.

Often, a user in the office requires only a portion of a plan. In this case, the required section of the plan on microfiche could be produced at about one-half the cost of the full paper plan copy. The sale of the complete plan file in microfiche form to major users could be a significant source of revenue to the land registration system.

PLAN MICROFILMING

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	34,400	Ø	34,400	
Pilot Project Testing	<u>45,000</u>	<u>5,000</u>	<u>50,000</u>	
Sub-Total	79,400	5,000	84,400	
Implementation	<u>114,195</u>	<u>606,555</u>	<u>720,750</u>	
Total One-time Costs	193,595	611,555	805,150	<u><u>805,150</u></u> (A)
2. <u>On-going Costs and Benefits (yearly)</u>				
Operating Costs	4,165	6,235	10,400	
Potential Benefits	Ø	170,000	170,000	
Realizable Benefits	<u>Ø</u>	<u>84,500</u>	<u>84,500</u>	
Net Benefit (Cost)	(4,165)	78,265	74,100	<u><u>74,100</u></u> (B)

3. Payback Period (A ÷ B) (Years)

$$\frac{805,150}{74,100} = 10.8 + \text{Delay } \frac{\quad}{\quad} \quad \boxed{10.8}$$

B. OTHER GOVERNMENT AGENCIES

C. SYSTEM USERS

Originals need no longer be in ink on linen. This can lead to substantial savings in plan material and preparation cost. Potential material savings based upon 25,000 plans per year entering the system are \$50,000.

D. NOTES AND INTANGIBLE BENEFITS

Often the user does not require a copy of the full survey plan. A portion of any plan on microfiche may be viewed or copies if desired. This cost would be $\frac{1}{2}$ that for a full paper plan copy.

Sale of entire plan file in microfiche form to major users could be a major source of revenue.

J. STANDARDIZED SHORTER DOCUMENTS AND COVER PAGE

The land registration system can be improved by:

- introducing a standardized cover page format;
- shortening and standardizing content of common documents; and
- reducing the number of affidavits required.

Development of the cover page and shorter document concept is primarily a legal concern. However, some system expertise is also required for design of the forms and documentation of their use.

Pilot project testing in one office for six to twelve months has been allowed. An initial supply of forms for use during this testing period has been shown as an equipment cost.

Implementation of the improvement will require training of staff in all offices and provision of user guides to system users.

On-going operating costs are nil. It is assumed that the cover pages would be provided by legal stationers or, if provided by the system, will be sold on a cost recovery basis.

This improvement provides major system benefits with respect to:

- document examination;
- abstracting and fee book entry; and
- storage and microfilming.

Savings of approximately 10% in examination time and in abstracting time are possible. This results in a yearly potential benefit of \$225,000. A reduction in storage and microfilming requirements could result in a yearly equipment saving of \$66,000. By realizing 75% of the potential benefits, a net yearly benefit of \$218,250 results.

The benefit stream is realized immediately upon implementation of the improvement. Thus, the pay-back period for this improvement is 1.1 years.

The potential savings to other government agencies and system users result from reduction in the time for both document preparation and searching. Potential savings in these areas have been identified as \$2,650,000 annually.

STANDARDIZED SHORTER DOCUMENTS AND COVER PAGEA. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	142,000	Ø	142,000	
Pilot Project Testing	<u>30,000</u>	<u>5,000</u>	<u>35,000</u>	
Sub-Total	172,000	5,000	177,000	
Implementation	<u>61,000</u>	<u>Ø</u>	<u>61,000</u>	
Total One-time Costs	233,000	5,000	238,000	<u>238,000 (A)</u>

2. On-going Costs and Benefits (yearly)

Operating Costs	Ø	Ø	Ø	
Potential Benefits	225,000	66,000	291,000	
Realizable Benefits	<u>168,750</u>	<u>49,500</u>	<u>218,250</u>	
Net Benefit (Cost)	168,750	49,500	218,250	<u>218,250 (B)</u>

3. Payback Period (A ÷ B) (Years)

<u>238,000</u>	÷	<u>218,250</u>	=	<u>1.1</u>	+ Delay	<u>Ø</u>	<div>1.1</div>
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B. OTHER GOVERNMENT AGENCIES

Statistics regarding the number of searches and documents registered by other Government agencies could not be isolated from those of general users. Therefore, savings are incorporated in "system users" benefits below.

C. SYSTEM USERS

Potential savings of \$2,650,000 annually based upon reduced times for both document preparation and searching.

D. NOTES AND INTANGIBLE BENEFITS

K. PROPERTY MAP PREPARATION AND MAINTENANCE

This potential improvement provides both property maps and unique identifiers for every land parcel in the Province. Most of the remaining improvements require unique land parcel identification. Therefore, they are dependent upon implementation of this improvement.

Property maps may be prepared and maintained using manual methods or computer-based techniques. Cost benefit sheets for both options have been prepared. The one-time cost of manual map preparation, \$35,317,525 is over three times the cost of computerized methods. Moreover, the on-going annual cost incurred using manual methods will be over \$300,000 more. This results because more time will be required to update property maps manually than with the use of automated methods. Due to the processing delays and the greater cost, manual methods of property map preparation cannot be recommended.

A computer-based property mapping system is preferred. There are four major stages to automated property map preparation and maintenance:

- development of the necessary hardware and software techniques;
- pilot project testing by preparation of complete property maps for one medium sized office;
- relatively fast map preparation for the initial 70% of land parcels, region by region; and
- verification of the descriptions of all parcels and map preparation for the remaining 30% as soon as possible thereafter.

The development cost is primarily staff. As a first step, some of the technology proposed must be evaluated. Property mapping requirements must be specified in detail. The maps must be suitable for the land registration system and, ideally, for the requirements of other users. Equipment costs are small and are largely for rental of equipment, as required, for testing and benchmarking. About \$147,000 will be required to develop a suitable property mapping system.

Pilot project testing requires installation of the property mapping computer system for one region. During testing, all land parcels in a medium size office (about 30,000 properties) would be converted to the automated property mapping system. In doing so, the procedures for capturing information from existing plans (the initial 70%) and searching document files (to verify all descriptions and to capture the remaining 30%) would be tested. Slightly over \$400,000 will be required for all development and testing and conversion of the first office.

The cost of implementing property mapping in the rest of the Province is almost equally divided between staff and equipment. Similarly, the costs are almost equally divided between capturing the first 70% and the last 30% of the properties. The staff costs associated with the last 30% are just under \$6,000,000.

In summary, about \$11,000,000 is required to prepare property maps for all land parcels in the Province.

On-going staff costs are composed of clerical and technologist time for property map fitting and updating. On-going equipment cost is primarily for hardware and software maintenance.

Potential benefits arise from elimination of Registrar's Compiled Plan production, reduction in the time to produce registrar's abstracts and reduced document examination and abstracting time. These time savings have been discounted to arrive at the realizable benefit. This results in a net benefit of \$99,240 over yearly operating costs and a pay-back period of 116.4 years.

The calculations of the pay-back period took into account only land registration system costs and benefits. However, many other government agencies prepare or use property maps. The expenditure of \$11,000,000 to serve only the property mapping needs of the land registration system does not appear to be justified. In a project of this magnitude, the requirements of other agencies must also be considered.

The Survey Task Force Report II identified the major government agencies involved in map preparation. Estimates of mapping expenditures by these agencies range from \$12,000,000 to \$21,000,000 per year. With a coordinated approach, on-going government savings of between \$1,000,000 and \$5,000,000 per year could be realized.

Management Board of Cabinet has recognized the desirability of eliminating duplicate mapping programs. This suggests that a further study to examine current requirements and property mapping expenditures of other Provincial agencies is required. It would allow the development of a coordinated approach in Ontario. By sharing costs and benefits with other agencies, a land registration system automated approach to map preparation and maintenance should easily be justified. For example, the Ministry of Revenue, Assessment Standards Division, has a mapping budget of approximately \$700,000 per year. Up-to-date property maps provided by the land registration system would eliminate duplicate effort.

The National Capital Commission, Metropolitan Toronto, the Regional Municipality of Sudbury and other major municipalities also have, or are developing, property mapping programs.

Up-to-date property maps provided from land registration records would again eliminate duplicate costs. It is estimated that annual savings of approximately \$500,000 would result.

A number of agencies, including the Ministry of Natural Resources, have produced maps which would be suitable for the implementation of the proposed land registration system property mapping program. Where these maps are available and sufficiently accurate, they would be used for initial property map preparation. Availability of these maps would reduce the implementation cost accordingly. However, their availability and suitability cannot be determined at this time. Therefore, this potential reduction has not been taken into account in the implementation cost shown on the summary sheets. This further illustrates the need for a study aimed at identifying potential savings that could result from a comprehensive cooperative mapping program throughout the Province.

PROPERTY MAP PREPARATION AND MAINTENANCE (MANUAL)

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	13,500	Ø	13,500	
Pilot Project Testing	<u>354,600</u>	<u>48,080</u>	<u>402,680</u>	
Sub-Total	368,100	48,080	416,180	
Implementation	<u>34,465,050</u>	<u>436,295</u>	<u>34,901,345</u>	
Total One-time Costs	34,833,150	484,375	35,317,525	<u>35,317,525</u>

2. On-going Costs and Benefits (yearly)

Operating Costs	541,200	30,000	571,200	
Potential Benefits	532,500	. Ø	532,500	
Realizable Benefits	<u>375,000</u>	<u>Ø</u>	<u>375,000</u>	
Net Benefit (Cost)	(166,200)	(30,000)	(196,200)	<u>(196,200)</u>

3. Payback Period ($A \div B$) (Years)

_____ \div _____ = _____ + Delay _____

NIL

B. OTHER GOVERNMENT AGENCIES

C. SYSTEM USERS

D. NOTES AND INTANGIBLE BENEFITS

PROPERTY MAP PREPARATION AND MAINTENANCE (AUTOMATED)

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	134,000	13,300	147,300	
Pilot Project Testing	<u>67,600</u>	<u>210,745</u>	<u>278,345</u>	
Sub-Total	201,600	224,045	425,645	
Implementation	<u>7,376,600</u>	<u>3,552,925</u>	<u>10,929,525</u>	
Total One-time Costs	7,578,200	3,776,970	11,355,170	<u>11,355,170</u>

2. On-going Costs and Benefits (yearly)

Operating Costs	155,000	120,760	275,760	
Potential Benefits	532,500	. Ø	532,500	
Realizable Benefits	<u>375,000</u>	<u>Ø</u>	<u>375,000</u>	
Net Benefit (Cost)	220,000	(120,760)	99,240	<u>99,240</u>

3. Payback Period (A ÷ B) (Years)

$$\frac{11,355,170}{99,240} = 114.4 + \text{Delay } 2 \quad \boxed{116.4}$$

B. OTHER GOVERNMENT AGENCIES

(See narrative)

C. SYSTEM USERS

The property mapping system provides both a picture and identifier for the land parcel. This reduces both the search time and document preparation time. It is estimated that a realizable user benefit of \$1,375,000 per year could be obtained.

D. NOTES AND INTANGIBLE BENEFITS

The assignment and control of identifiers is most easily accomplished during the property mapping process.

L. LOCAL OFFICE CASH REGISTER DATA CAPTURE AND ENQUIRY PADS

With this improvement, computer equipment is installed in each land registry office.

Local office computerization requires the following equipment:

- a minicomputer (with data entry and display console) to control all other components;
- an intelligent cash register for capturing plan and document registration activity;
- an enquiry pad for obtaining the last registration for a land parcel; and
- magnetic disc and tape cassette units for storage of information.

Unique identifiers describing each land parcel are required to implement this improvement. They are used:

- on the standardized cover pages;
- when entering registration information through the cash register; and
- when determining the last registration against a parcel from the enquiry pads.

Development costs are incurred for legal, systems and documentation tasks. This change involves a significant departure from existing office procedures. Therefore, pilot project testing (in one office) for between six to nine months has been allowed. The cost of a small office configuration has been included for testing and refining the system. Thus, a total of \$116,500 is required to complete development and testing of local office computerization.

Staff implementation costs are primarily for staff training and monitoring of system performance in each office upon installation. The equipment costs for implementation include computerization of each office. Offices also serving as, or adjacent to, regional centres could use the regional computer. This avoids unnecessary duplication of computer equipment. A further saving would be possible with closing of the smaller offices. However, these savings have not been assumed. Equipment costs have been calculated for computerization of all 65 existing offices.

The total one-time cost for local office computerization is, as a result, \$1,811,100.

No additional staff is required to operate the system. System power-on and power-off procedures are simple and require negligible time. The cashier data collection function remains the same as at present. The on-going equipment cost is for maintenance.

Potential staffing benefits of \$254,000 arise from elimination of fee book preparation and staff retrieval and refiling index books for subsearching. The number of full complement positions saved on an office-by-office basis reduces this to a realizable benefit of \$69,450. This results in a net on-going operating cost of \$16,265 per year for the improvement.

The above figures do not include the cost of the intelligent cash registers. They were described and costed previously in Section D. A total one-time cost of \$176,000 and a net yearly on-going cost of \$9,000 was associated with cash register installation. This increases the total one-time cost for automating the local offices to \$1,987,100. A net yearly cost of \$25,265 is the result.

However, there is a potential user benefit of \$290,000 per year in reduced time and expense for subsearching. Since the search process is automated, it is faster and much more accurate than the present manual subsearch.

LOCAL OFFICE CASH REGISTER DATA CAPTURE AND ENQUIRY PADS

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	74,000	Ø	74,000	
Pilot Project Testing	<u>25,500</u>	<u>17,000</u>	<u>42,500</u>	
Sub-Total	99,500	17,000	116,500	
Implementation	<u>103,300</u>	<u>1,591,300</u>	<u>1,694,600</u>	
Total One-time Costs	202,800	1,608,300	1,811,100	<u><u>-1,811,100</u></u> (A)
2. <u>On-going Costs and Benefits</u> (yearly)				
Operating Costs	Ø	85,715	85,715	
Potential Benefits	254,000	Ø	254,000	
Realizable Benefits	<u>69,450</u>	<u>Ø</u>	<u>69,450</u>	
Net Benefit (Cost)	69,450	(85,715)	(16,265)	<u><u>(16,265)</u></u> (B)

3. Payback Period (A ÷ B) (Years)

_____ ÷ _____ = _____ + Delay _____

NIL

B. OTHER GOVERNMENT AGENCIES

C. SYSTEM USERS

Provides a reduction in subsearch time. A potential benefit of \$290,000 per year results.

D. NOTES AND INTANGIBLE BENEFITS

Automatic indication of conditions prohibiting registration could be provided

More accurate subsearching for user.

M. BASIC OPERATIONAL ACTIVITY REPORTING

Each office prepares manual reports of registration activity on a weekly, monthly, quarterly and yearly basis.

The information captured by the intelligent cash registers could be used to prepare these reports on the regional centre computers. A magnetic disc or tape cassette in each office would be used to capture registration and search information from cash register entries. It would then be forwarded by courier to the regional centre for processing and report printing. Capturing of other types of information, such as staffing figures, for report preparation is also possible.

The development cost is primarily for program development and documentation. Since the reporting system is fairly straight-forward, pilot project testing could be completed in about one man-month of intermediate analyst time.

Implementation may require capturing year-to-date and prior year figures for comparative reporting. About one month of clerical time has been allowed for this conversion. The \$180,000 equipment cost is associated with installation of medium speed line printers and cassette readers in each regional centre.

The total one-time cost for implementation of basic operational reporting is, therefore, \$218,250.

The processing of reports in the regional centre will require some computer operator time. \$32,000 has been allowed for this activity. On-going equipment cost consists of hardware and software maintenance, mailing of reports and the supplies used for printing.

Much of the local office activity report preparation time will be eliminated with implementation of this improvement. Potentially, \$150,000 in staff time could be saved. On an office-by-office basis, removal of full complement positions results in a realizable benefit of \$78,000. Thus, an on-going operational benefit of \$32,325 per year results. This provides a pay-back period of 6.8 years.

Information regarding local office activity will be available in a machine-readable form. It could be supplied to other government agencies or system users in this form. Provision of machine-readable information in addition to printed reports allows direct use of data where additional machine processing is required.

BASIC OPERATIONAL ACTIVITY REPORTING

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	34,000	Ø	34,000	
Pilot Project Testing	<u>2,250</u>	<u>Ø</u>	<u>2,250</u>	
Sub-Total	36,250	Ø	36,250	
Implementation	<u>2,000</u>	<u>180,000</u>	<u>182,000</u>	
Total One-time Costs	38,250	180,000	218,250	<u><u>218,250</u></u> (A)

2. On-going Costs and Benefits (yearly)

Operating Costs	32,000	13,675	45,675	
Potential Benefits	150,000	Ø	150,000	
Realizable Benefits	<u>78,000</u>	<u>Ø</u>	<u>78,000</u>	
Net Benefit (Cost)	46,000	(13,675)	32,325	<u><u>32,325</u></u> (B)

3. Payback Period (A ÷ B) (Years)

$$\frac{218,250}{32,325} = 6.8 + \text{Delay } \frac{\text{Ø}}{\text{Ø}}$$

6.8

B. OTHER GOVERNMENT AGENCIES

C. SYSTEM USERS

D. NOTES AND INTANGIBLE BENEFITS

Operating reports concerning tax collection could be made available to the Ministry of Revenue in machine readable form.

N. CROSS-REFERENCE ABSTRACT ENTRY DATA CAPTURE (25%)

Information from about 25% of the total registrations must be captured to provide cross-reference indexes and a computerized writs of execution system. For example, all transfers and other changes of ownership must be captured in order to maintain a current owner name index.

Development cost is for legal, systems, programming and documentation staff. Pilot project staffing costs are for monitoring and supervising operation of the initial system. The total development and testing cost is \$56,450.

On implementation, local and regional staff must be trained. Initial operation of the system requires supervision. A second tape drive must be installed in each regional centre in order to store the amount of information collected. Thus, the total one-time cost for implementation of this improvement is \$247,500.

Operating costs exclude local office staff costs. Local office operation requires less than full complement positions. This time is offset by the savings in time which were not realizable from prior improvements. Thus, complement positions which could not be eliminated, but which were not fully utilized, will absorb the data conversion workload in the local office.

However, regional centre computer operator time will be required. This has been included as an on-going operating staff cost. The on-going equipment cost is composed of supplies, courier and maintenance costs.

There are no benefits from this activity. It simply captures information for subsequent use. Thus, an on-going yearly cost of \$33,475 will result.

Local office entry of abstract information means that local control over system information is maintained. All examination and abstracting tasks will continue to be performed in the local office. This also results in better utilization of local office computer equipment.

CROSS-REFERENCE ABSTRACT ENTRY DATA CAPTURE (25%)

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	47,700	Ø	47,700	
Pilot Project Testing	<u>8,750</u>	<u>Ø</u>	<u>8,750</u>	
Sub-Total	56,450	Ø	56,450	
Implementation	<u>65,850</u>	<u>125,200</u>	<u>191,050</u>	
Total One-time Costs	122,300	125,200	247,500	<u>247,500 (A)</u>
2. <u>On-going Costs and Benefits (yearly)</u>				
Operating Costs	16,875	16,600	33,475	
Potential Benefits	Ø	Ø	Ø	
Realizable Benefits	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Net Benefit (Cost)	(16,875)	(16,600)	(33,475)	<u>(33,475) (B)</u>

3. Payback Period (A ÷ B) (Years)

_____ ÷ _____ = _____ + Delay _____

NIL

B. OTHER GOVERNMENT AGENCIES

C. SYSTEM USERS

D. NOTES AND INTANGIBLE BENEFITS

Fuller utilization of staff

Local control over data entry

O. CROSS-REFERENCE INDEXES

Cross-reference indexes will be used to link common identifiers and owners' names to land parcel identification numbers. This is a new service. It is not provided in the current system. It is primarily a benefit to users. The user can more quickly and easily locate the information required for dealing with the land registration system.

Development costs are for legal, system, programming and documentation staff. No pilot project testing is required. This results in a development and testing cost of \$40,250.

To be useful, all existing information must be captured. Complete cross-reference indexes for every land parcel in the Province should be available. Ideally, this information would be captured at the same time as preparation of the initial property maps. However, the cost of doing this is associated with providing cross-reference indexes and has been included in this cost benefit analysis. About \$474,000 is required to perform this task. This leads to a total one-time cost of \$514,250.

Some small amount of regional centre computer operator time and local office filing time is required for preparing and handling cross-reference indexes. \$10,900 has been allowed for on-going operating staff time. On-going equipment costs are for printing, supplies and hardware and software maintenance.

A potential benefit of about \$10,000 a year is obtained from a reduction in clerical time for preparing and mailing notices. However, this is relatively small and it cannot be realized in any office. As a result, a yearly operating cost of \$15,650 results from implementation of cross-reference indexes.

System users will be able to identify more easily the required land parcel. A potential time saving of about \$50,000 has been identified for system users. This is a new service and the costs could be easily recovered through a modest fee for use of the indexes. Of course, the recovery period and subsequent profitability of this service will depend largely on public usage of the indexes.

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	40,250	Ø	40,250	
Pilot Project Testing	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Sub-Total	40,250	Ø	40,250	
Implementation	<u>474,000</u>	<u>Ø</u>	<u>474,000</u>	
Total One-time Costs	514,250	Ø	514,250	<u><u>514,250</u></u> (A)
2. <u>On-going Costs and Benefits (yearly)</u>				
Operating Costs	10,900	4,750	15,650	
Potential Benefits	10,000	Ø	10,000	
Realizable Benefits	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Net Benefit (Cost)	(10,900)	(4,750)	(15,650)	<u><u>(15,650)</u></u> (B)

3. Payback Period ($A \div B$) (Years)

_____ \div _____ = _____ + Delay _____

NIL

B. OTHER GOVERNMENT AGENCIESC. SYSTEM USERS

Indexes facilitate parcel identification: estimated benefit \$50,000. There would also be an additional saving due to ability to search by geographic area if coordinate centroids are cross-referenced to owner's name.

D. NOTES AND INTANGIBLE BENEFITS

New service - costs can be recovered through modest fees for use of indexes and provision of copies. Recovery period and subsequent profitability will depend largely on public usage of indexes.

P. COMPUTERIZED WRITS OF EXECUTION SYSTEM

The proposed writs of execution system would be a new service of the land registration system. It is designed to allow judgement creditors to locate easily and quickly any land holdings of their debtors. It also allows judgement creditors to receive notice of any future land acquisition by their debtors.

The legal, systems and documentation costs for development of this system are relatively large. The legal costs are to provide the total legal framework for the writs system, including the registration requirements. Because of the magnitude of the changes involved, close monitoring through a pilot project will be essential. This leads to a total development and testing cost of \$113,750 in staff time.

Implementation of the system is straight-forward. A minimal amount of training in each local office will be required. Therefore, the total one-time cost for implementation of this system is \$120,750.

Operation of the system will require part-time assignment of a computer operator in the regional centre. A total cost of \$16,875 has been allowed for regional centre computer staff time. Printing, supplies and software maintenance make up the on-going equipment cost.

Elimination of the clerical search for land titles writs of execution could potentially save \$60,000 in staff time. However, the number of full complement positions which can be eliminated reduces the realizable benefit to \$30,000. This results in a net operating benefit of \$1,330 per year.

Since the net benefit is positive, a pay-back period of 91 years can be calculated. However, since this is a new service, it is reasonable to expect additional revenue from registration of writs and searching of the owner name file. With a nominal fee of \$3.00 per registration and \$1.00 per name search, a revenue increase of about \$350,000 per year can be expected.

System users will also benefit since this eliminates the writs search for the purchaser and the name clearance problem for the vendor. It, therefore, greatly facilitates the conveyancing process at the time of closing.

THE WRITS OF EXECUTION SYSTEM

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	90,750	0	90,750	
Pilot Project Testing	<u>23,000</u>	<u>0</u>	<u>23,000</u>	
Sub-Total	113,750	0	113,750	
Implementation	<u>7,000</u>	<u>0</u>	<u>7,000</u>	
Total One-time Costs	120,750	0	120,750	<u>120,750 (A)</u>
2. <u>On-going Costs and Benefits (yearly)</u>				
Operating Costs	16,875	11,795	28,670	
Potential Benefits	60,000	0	60,000	
Realizable Benefits	<u>30,000</u>	<u>0</u>	<u>30,000</u>	
Net Benefit (Cost)	13,125	(11,795)	1,330	<u>1,330 (B)</u>
3. <u>Payback Period (A ÷ B) (Years)</u>				
120,750 ÷ 1,330 = 91 + Delay 0				91

B. OTHER GOVERNMENT AGENCIES

C. SYSTEM USERS

Eliminates writs search for purchaser and clearance problem for vendor. Facilitates conveyancing process at time of closing.

D. NOTES AND INTANGIBLE BENEFITS

Additional revenue from registration and searching of writs.
Registration: 70,000 registrations at, at least, \$3.00 each = \$210,000.

Searching: 70,000 searches at, at least, \$1 00 per name (assume 2 names searched per request) = \$140,000.

Therefore, system will recover capital cost in first year and will show significant profit on on-going basis (additional system cost of registration of writs in the registry system has been taken into account).

Calculations use comparable fees in the present system and known registration volumes.

Q. COMPLETE ABSTRACT ENTRY DATA CAPTURE FOR ALL REGISTRATIONS

In order to reproduce the index book information, abstract entries for all document and plan registrations must be captured.

The information for about 25% of the registration volume would be captured in the local office as described in Section N. The remaining 75% must now be captured. Three options for completing the data capture exist:

- capture all abstract information in the local office;
- capture the remaining 75% in the regional centre; or
- remove data capture from the local office and perform all data capture at the regional centre.

The recommended method is to continue some capture in the local office. This allows greater utilization of local office equipment and staff. The local office retains control over all documents and the data entered from them.

In addition, performing either part or all data entry at the regional centre results in increased costs for both one-time implementation and on-going operation. Local office data capture is, therefore, superior from both an operational and a financial viewpoint.

Complete local office data capture is also simply an extension of the existing data capture procedures. Development cost is, therefore, limited to \$24,300 for extension of the systems, programs and documentation to data capture for the remaining transaction types. A minimal pilot project test is required to ensure satisfactory operation of the system with new transaction types. Thus, the total development and testing cost for implementation of this option is \$26,550.

To handle the additional data conversion volume, some offices will require additional data entry terminals. Monitoring of system performance with the increased workload and training of terminal operators would also be required. This results in a total one-time cost of \$134,100.

When all of the abstract entry data is captured and computerized index pages are being produced, there is no further need for abstract clerks. The clerical time eliminated can be applied to terminal operation. Therefore, there is no additional operating cost for local office terminal operators. However, some small amount of regional centre computer operator time will be required. Similarly, there will be on-going costs for supplies and additional equipment maintenance.

Since this improvement only captures information for subsequent use, there are no benefits. Thus, an on-going yearly cost of \$26,420 will result.

With implementation of this improvement, computerization of the local office is complete.

COMPLETE ABSTRACT ENTRY DATA CAPTURE FOR ALL REGISTRATIONS

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	24,300	Ø	24,300	
Pilot Project Testing	<u>2,250</u>	<u>Ø</u>	<u>2,250</u>	
Sub-Total	26,550	Ø	26,550	
Implementation	<u>29,850</u>	<u>77,700</u>	<u>107,550</u>	
Total One-time Costs	56,400	77,700	134,100	<u><u>134,100</u></u> (A)

2. On-going Costs and Benefits (yearly)

Operating Costs	16,875	9,545	26,420	
Potential Benefits	Ø	Ø	Ø	
Realizable Benefits	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Net Benefit (Cost)	(16,875)	(9,545)	(26,420)	<u><u>(26,420)</u></u> (B)

3. Payback Period ($A \div B$) (Years)

_____ \div _____ = _____ + Delay _____

NIL

B. OTHER GOVERNMENT AGENCIES

C. SYSTEM USERS

D. NOTES AND INTANGIBLE BENEFITS

R. COMPLETE COMPUTERIZED INDEX DATA BASE

The abstract entries captured as described previously must be maintained in some type of computer data base. This data base could be maintained:

- on a regional basis; or
- on a centralized basis.

Total one-time costs are identical for either option. The majority of these costs are for system analyst and programmer time necessary to develop the required file handling procedures. Only a small amount of testing is required and there is a small implementation cost for training.

There are significant differences in the on-going costs for regional or central operation. Since the data base does not provide reports directly, there are no potential or realizable benefits in either case. Therefore, both methods result in a net yearly cost increase. The estimated increases are:

- \$35,400 per year on a regional basis; and
- \$89,025 per year on a centralized basis.

Regional costs are composed of computer operator time and software maintenance. Central site operations require less computer operator time than at the regional centres. However, the processing charges from the central government service bureau must also be considered. These would amount to \$72,150 annually according to an estimate provided by the Downsview Computing Centre.

Since the regional centre computers were purchased for property mapping, there is no corresponding charge for usage of available time.

Since both methods result in an increased yearly operating cost, the decision to implement either option will depend upon the benefits to be obtained with subsequent improvements.

COMPLETE COMPUTERIZED INDEX DATA BASE (REGIONAL)

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	73,500	Ø	73,500	
Pilot Project Testing	<u>8,750</u>	<u>Ø</u>	<u>8,750</u>	
Sub-Total	82,250	Ø	82,250	
Implementation	<u>2,700</u>	<u>Ø</u>	<u>2,700</u>	
Total One-time Costs	84,950	Ø	84,950	<u>84,950 (A)</u>
2. <u>On-going Costs and Benefits (yearly)</u>				
Operating Costs	33,750	1,650	35,400	
Potential Benefits	Ø	Ø	Ø	
Realizable Benefits	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Net Benefit (Cost)	(33,750)	(1,650)	(35,400)	<u>(35,400) (B)</u>

3. Payback Period (A ÷ B) (Years)

_____ ÷ _____ = _____ + Delay _____

NIL

B. OTHER GOVERNMENT AGENCIES

C. SYSTEM USERS

D. NOTES AND INTANGIBLE BENEFITS

Prerequisite to printed index, C.O.M., complete operational reporting and bulk user service.

COMPLETE COMPUTERIZED INDEX DATA BASE (CENTRAL)

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	73,500	Ø	73,500	
Pilot Project Testing	<u>8,750</u>	<u>Ø</u>	<u>8,750</u>	
Sub-Total	82,250	Ø	82,250	
Implementation	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Total One-time Costs	82,250	Ø	82,250	<u>82,250</u> (A)

2. On-going Costs and Benefits (yearly)

Operating Costs	16,875	72,150	89,025	
Potential Benefits	Ø	Ø	Ø	
Realizable Benefits	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Net Benefit (Cost)	(16,875)	(72,150)	(89,025)	<u>(89,025)</u> (B)

3. Payback Period ($A \div B$) (Years)

_____ \div _____ = _____ + Delay _____

NIL

B. OTHER GOVERNMENT AGENCIES

C. SYSTEM USERS

D. NOTES AND INTANGIBLE BENEFITS

Prerequisite to printed index, C.O.M., complete operational reporting and bulk user service

S. COMPUTER PRODUCED INDEX PAGES

When all plan and document abstract entries are captured, parcel register and abstract index pages can be produced by computer. No further entries would be made in the existing books and an index page would be produced by computer whenever an abstract entry is processed. Since a history of abstract entries is to be maintained in the computerized index data base, new index pages from the computer file would contain all abstract entries pertaining to the land parcel from the time that abstract entry data capture was begun.

There are three options for production of index pages from a computer:

- printed index pages produced regionally;
- printed index pages produced centrally; or
- microfilm records produced by a central COM unit.

The costs and benefits of providing printed indexes either regionally or centrally are similar. Development costs are for systems, programming and documentation staff. Pilot project testing is required since this improvement replaces manual abstracting in the local offices. For printed indexes, the total development and testing cost is estimated at \$43,250 on either a regional or central basis.

The development and testing cost for the COM system is \$97,250. The additional cost is for development of specialized COM software and the legal changes necessary for introduction of other than a printed record.

The implementation costs of the three alternatives differ. With a centrally printed index, only the local office staff need be trained. Some additional training is required for regional staff with regional printing of indexes. Implementation of the COM system requires purchase of a computer-onto-microfilm processing unit. This results in a total one-time cost for each option as follows:

- printed index regionally, \$51,550;
- printed index centrally, \$49,750; or
- microfilm index (COM), \$327,500.

The on-going benefits achieved from computer produced index pages are identical for all three options. They result from elimination of manual abstracting in the local office. The potential benefits in clerical time saved have been reduced so that only elimination of complete complement positions is shown as a realizable benefit. This gives a realizable annual benefit of \$550,000 for each option.

Operating costs vary with the option chosen. Regional printed indexes require local office time for filing and regional centre time for computer operators. There is also the cost associated with supplies for printing the pages and maintenance of the software. A centrally printed index requires only local office staff filing time. Computer operator cost is included in the processing charges for the central computer. The COM option requires both local office filing time and COM unit operator time. There are large supply and processing charges associated with this option. Approximately 1,100,000 microfiche per year must be produced at 30¢ per microfiche. This produces an annual supplies cost alone in excess of \$300,000.

Each of the printed index options produces a net yearly benefit:

- printed index regionally, \$448,300; or
- printed index centrally, \$438,175.

The centralized microfilm option (COM), produces a net yearly cost of \$168,850.

The printed index options both result in pay-back periods of .11 years.

Each of these options results in improved record accuracy, uniformity and security. All allow automatic deletion of expired and discharged interests. There would also be automatic entry in the total number of parcels affected by a registration. Implementation of the improvement eliminates the abstract function and reduces the required level of staff skills in the local office.

The microfilm option also produces a significant saving in space since abstract books would be replaced by microfiche files. With printed index pages, a hard copy page similar in size to the existing abstract book pages would be produced. Therefore, there would be no space saving and no reduction in storage requirements for abstract books.

Implementation of a COM system at this time cannot be justified because of the high on-going operating costs associated with it. However, because of the potential space savings the system offers, it should be reconsidered if these costs go down. Also the purchase of COM service from private suppliers may prove economically justifiable at a later date.

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	26,500	Ø	26,500	
Pilot Project Testing	<u>16,750</u>	<u>Ø</u>	<u>16,750</u>	
Sub-Total	43,250	Ø	43,250	
Implementation	<u>8,300</u>	<u>Ø</u>	<u>8,300</u>	
Total One-time Costs	51,550	Ø	51,550	<u><u>51,550</u></u> (A)

2. On-going Costs and Benefits (yearly)

Operating Costs	71,875	29,825	101,700	
Potential Benefits	905,000	Ø	905,000	
Realizable Benefits	<u>550,000</u>	<u>Ø</u>	<u>550,000</u>	
Net Benefit (Cost)	478,125	(29,825)	448,300	<u><u>448,300</u></u> (B)

3. Payback Period (A ÷ B) (Years)

$$\frac{51,550}{448,300} = .11 + \text{Delay}$$

.11

B. OTHER GOVERNMENT AGENCIESC. SYSTEM USERSD. NOTES AND INTANGIBLE BENEFITS

- improved record accuracy, uniformity and security
- automatic deletion of expired and discharged interests.

Elimination of the abstract function reduces the required level of staff skills.

COMPUTER PRODUCED INDEX PAGES (PRINTED-CENTRAL)

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	26,500	Ø	26,500	
Pilot Project Testing	<u>16,750</u>	<u>Ø</u>	<u>16,750</u>	
Sub-Total	43,250	Ø	43,250	
Implementation	<u>6,500</u>	<u>Ø</u>	<u>6,500</u>	
Total One-time Costs	49,750	Ø	49,750	<u>49,750</u> (A)

2. On-going Costs and Benefits (yearly)

Operating Costs	55,000	56,825	111,825	
Potential Benefits	905,000	Ø	905,000	
Realizable Benefits	<u>550,000</u>	<u>Ø</u>	<u>550,000</u>	
Net Benefit (Cost)	495,000	(56,825)	438,175	<u>438,175</u> (B)

3. Payback Period (A ÷ B) (Years)

$$\underline{49,750} \div \underline{438,175} = \underline{.11} + \text{Delay}$$

.11

B. OTHER GOVERNMENT AGENCIES

C. SYSTEM USERS

D. NOTES AND INTANGIBLE BENEFITS

- improved record accuracy, uniformity and security
- automatic deletion of expired and discharged interests.

Elimination of the abstract function reduces the required level of staff skills.

A. SYSTEM COSTS AND BENEFITS

<u>1. One-time Costs</u>	Staff	Equipment	Total	
Development	76,000	Ø	76,000	
Pilot Project Testing	<u>21,250</u>	<u>Ø</u>	<u>21,250</u>	
Sub-Total	97,250	Ø	97,250	
Implementation	<u>8,750</u>	<u>221,500</u>	<u>230,250</u>	
Total One-time Costs	106,000	221,500	327,500	<u>327,500</u> (A)
<u>2. On-going Costs and Benefits (yearly)</u>				
Operating Costs	50,600	668,250	718,850	
Potential Benefits	905,000	Ø	905,000	
Realizable Benefits	<u>550,000</u>	<u>Ø</u>	<u>550,000</u>	
Net Benefit (Cost)	499,400	(668,250)	(168,850)	<u>(168,850)</u> (B)

3. Payback Period (A ÷ B) (Years)

_____ ÷ _____ = _____ + Delay _____

NIL

B. OTHER GOVERNMENT AGENCIES

C. SYSTEM USERS

D. NOTES AND INTANGIBLE BENEFITS

Savings in space and supplies. Also intangible benefits:

- improved record accuracy, uniformity and security
- automatic deletion of expired and discharged interests.

Elimination of the abstract function reduces the required level of staff skills.

T. COMPLETE OPERATIONAL ACTIVITY REPORTING

Basic operational activity reporting will provide summary reports of current registration activity in the offices. Complete operational reporting provides the additional ability to scan and manipulate the abstract index and parcel register file data. For example, the index data base could be scanned to determine:

- the number of land parcels with mortgages over a certain amount;
- the number of land parcels owned by non-residents;
- the number of years before the average land parcel is transferred; or
- the number of joint tenancies.

Complete operational activity reporting could be provided on regional or central computers. In either case, the one-time costs are identical. Development cost is for systems, programming and documentation staff. Pilot project testing was allowed for approximately one man-month to provide for monitoring initial requests. There is no implementation cost.

Again, the yearly benefits are identical. The potential benefits are due to eliminating current manual reporting activities in the local offices. These have been discounted in terms of full complement positions which may be saved to arrive at a realizable benefit of \$27,000 per year. On a regional basis, regional computer centre operators are required and software maintenance and printing costs will be incurred. On a centralized basis, operators are included in the data centre charges. These and software maintenance are expected to be about \$13,250 a year. Thus, there is a small annual saving with central reporting and a small annual cost with regional reporting. Due to the small one-time cost, cost recovery in 1.2 years is possible on a centralized basis.

Other government agencies are most likely to benefit from this service. Introduction of the improvement provides a faster response time and a larger quantity of information is readily available from the system. Requests for selected or aggregated information can be serviced easily and quickly from the computer systems. This service is unavailable with the current manual systems.

COMPLETE OPERATIONAL ACTIVITY REPORTING (REGIONAL)

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	14,750	Ø	14,750	
Pilot Project Testing	<u>2,250</u>	<u>Ø</u>	<u>2,250</u>	
Sub-Total	17,000	Ø	17,000	
Implementation	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Total One-time Costs	17,000	Ø	17,000	<u><u>17,000</u></u> (A)

2. On-going Costs and Benefits (yearly)

Operating Costs	32,000	1,750	33,750	
Potential Benefits	55,000	Ø	55,000	
Realizable Benefits	<u>27,000</u>	<u>Ø</u>	<u>27,000</u>	
Net Benefit (Cost)	(5,000)	(1,750)	(6,750)	<u><u>(6,750)</u></u> (B)

3. Payback Period (A ÷ B) (Years)

_____ ÷ _____ = _____ + Delay _____

NIL

B. OTHER GOVERNMENT AGENCIES

Improved service in terms of response time and quantity of readily available information. Requests for selected and aggregate information can be serviced.

C. SYSTEM USERS

D. NOTES AND INTANGIBLE BENEFITS

COMPLETE OPERATIONAL ACTIVITY REPORTING (CENTRAL)

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	14,750	Ø	14,750	
Pilot Project Testing	<u>2,250</u>	<u>Ø</u>	<u>2,250</u>	
Sub-Total	17,000	Ø	17,000	
Implementation	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Total One-time Costs	17,000	Ø	17,000	<u><u>17,000</u></u> (A)

2. On-going Costs and Benefits (yearly)

Operating Costs	Ø	13,250	13,250	
Potential Benefits	55,000	Ø	55,000	
Realizable Benefits	<u>27,000</u>	<u>Ø</u>	<u>27,000</u>	
Net Benefit (Cost)	27,000	(13,250)	13,750	<u><u>13,750</u></u> (B)

3. Payback Period (A ÷ B) (Years)

$$\underline{17,000} \div \underline{13,750} = \underline{1.2} + \text{Delay } \underline{\hspace{2cm}}$$

1.2

B. OTHER GOVERNMENT AGENCIES

Improved service in terms of response time and quantity of readily available information. Requests for selected and aggregate information can be serviced.

C. SYSTEM USERS

D. NOTES AND INTANGIBLE BENEFITS

U. SELECTIVE AND AGGREGATE REPORTING FOR BULK USERS

With this improvement, both property map and index information can be scanned and supplied to bulk users. For example, the property map file information could be used to determine all land parcels within a geographic area. The information obtained by this process could then be used to extract owner name and address information from the index files. Again, this service can be supplied either regionally or centrally.

The total one-time costs are identical in either case. Development costs are primarily for systems, programming and documentation staff. A small amount of legal time has been included in these estimates. Pilot project testing has been provided since the mapping and indexing systems must communicate with each other. No implementation costs will be incurred. The total one-time costs for this improvement are, therefore, \$89,350.

On a regional basis, some computer operator time will be required. In addition, software maintenance charges will be incurred. On a central basis, operator costs are absorbed in data centre charges. These, plus software maintenance costs are shown as on-going equipment costs.

There are no system benefits in terms of reduced equipment or staff costs. Therefore, an increased yearly operating cost will be incurred:

- on a regional basis, \$9,650 per year; or
- on a central basis, \$18,150 per year.

However, this is an important new service for many system users. The sale of information in selected and aggregate form could be made highly profitable with even a modest fee. Currently, users must maintain duplicate files of land registration information in order to approximate provision of this service. Elimination of these duplicate files would result in significant savings for system users.

A potential government saving of several million dollars is possible with the elimination of duplicate property information files. The system will be designed to allow the land registration files to communicate with the computer based files of other major users of property information such as the Ministry of Natural Resources. This will make the service even more useful to such users and lead to a further reduction of duplicate effort. The potential overall government savings alone are major justification for the proposed system computerization improvements.

SELECTIVE AND AGGREGATE REPORTING FOR BULK USERS (CENTRAL)

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	79,450	Ø	79,450	
Pilot Project Testing	<u>9,900</u>	<u>Ø</u>	<u>9,900</u>	
Sub-Total	89,350	Ø	89,350	
Implementation	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Total One-time Costs	89,350	Ø	89,350	<u>89,350 (A)</u>

2. On-going Costs and Benefits (yearly)

Operating Costs	Ø	18,150	18,150	
Potential Benefits	Ø	Ø	Ø	
Realizable Benefits	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Net Benefit (Cost)	Ø	(18,150)	(18,150)	<u>(18,150) (B)</u>

3. Payback Period (A ÷ B) (Years)

_____ ÷ _____ = _____ + Delay _____

NIL

B. OTHER GOVERNMENT AGENCIES

Elimination of duplicate property information files should result in a major overall government saving (perhaps several million dollars or more).

C. SYSTEM USERS

Significant new service for many major users. Sale of information in selected and aggregate form can be made highly profitable even with modest fees. Elimination of duplicate files.

D. NOTES AND INTANGIBLE BENEFITS

SELECTIVE AND AGGREGATE REPORTING FOR BULK USERS (REGIONAL)

A. SYSTEM COSTS AND BENEFITS

1. <u>One-time Costs</u>	Staff	Equipment	Total	
Development	79,450	Ø	79,450	
Pilot Project Testing	<u>9,900</u>	<u>Ø</u>	<u>9,900</u>	
Sub-Total	89,350	Ø	89,350	
Implementation	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Total One-time Costs	89,350	Ø	89,350	<u>89,350</u> (A)
2. <u>On-going Costs and Benefits (yearly)</u>				
Operating Costs	3,500	6,150	9,650	
Potential Benefits	Ø	Ø	Ø	
Realizable Benefits	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	
Net Benefit (Cost)	(3,500)	(6,150)	(9,650)	<u>(9,650)</u> (B)

3. Payback Period ($A \div B$) (Years)

_____ \div _____ = _____ + Delay _____

NIL

B. OTHER GOVERNMENT AGENCIES

Elimination of duplicate property information files should result in a major overall government saving (perhaps several million dollars or more).

C. SYSTEM USERS

Significant new service for many major users. Sale of information in selected and aggregate form can be made highly profitable even with modest fees. Elimination of duplicate files.

D. NOTES AND INTANGIBLE BENEFITS

V. A SUMMARY OF COSTS AND BENEFITS

The cost and benefit information from the preceding sections is summarized in Table 4, page , Cost Benefit Summary. The one-time costs, yearly on-going costs and benefits, cost recovery and service-related factors for each potential improvement are shown in the table.

Three choices for microfilm document systems are shown near the top of the table. For each, the costs and pay-back period including the total of 9 microfilm processing centres proposed for implementation of a document microfilm system are also given.

Similarly, the cost of intelligent cash registers has been included in the cost for local office cash register data capture and enquiry pads. The sub-total figure, therefore, represents the total cost incurred with office computerization.

The lower part of the summary table is divided into the cost/benefit analysis for improvements which may use either regional processing or centralized processing. Sub-totals for each option have been included to show the effect of implementing those improvements on a regional or a centralized basis. The centralized option also includes a comparison of the costs and benefits of computer-produced printed and microfilm (COM) index pages.

Using the summary page, the most attractive combination of improvements can be selected. This results in a list of preferred improvements shown in Table 5, page . Implementation of all 17 preferred improvements would result in a total one-time cost of \$19,125,550, a net yearly realizable benefit of \$1,364,960 and a pay-back period of 14 years.

However, the cost and benefit figures were calculated by considering potential improvements as independent entities. In practice, a number of improvements would be implemented together. Development and implementation would be spread over a number of years. The overall cost, benefit and pay-back period will be affected by these considerations. The number of regional centres and local offices are also factors in this analysis.

Calendarization of costs and benefits is now required. A realistic implementation strategy must be devised.

TABLE 4 - COST-BENEFIT SUMMARY

Potential Improvements	ONE-TIME COSTS					Total One-time Costs	ON-GOING COSTS AND BENEFITS (YEARLY)			Cost Recovery Factor		Service Related Potential Savings	
	Development and Testing	Development Pilot Project	Staff	Implementation	Equipment		Operating Costs	Potential Realized Benefit	Net Benefit (Cost)	of Years	Delay Payback		
Legal Changes not Requiring Equipment Changes	105,000	0	185,000	528,000	0	633,000	0	480,000	360,000	1	2.8	see users	
Intelligent Cash Register for Balancing Functions Only	4,500	0	4,500	6,500	165,000	176,000	20,250	41,250	11,250	(9,000)	0	Nil	-
Microfilm Processing	0	0	0	2,800	135,200	138,200	6,760	n/a	n/a	(6,760)	0	Nil	-
Non-paralysed Document Microfiche	30,500	0	30,500	1,858,150	1,668,750	3,557,440	85,685	666,700	281,870	186,185	1	19.1	-
Paralysed Document Microfiche	37,250	26,250	63,500	2,078,190	3,137,050	5,276,740	532,800	735,320	317,130	(215,670)	2	Nil	see users
Automated Cartridge Microfilm System	30,500	9,750	40,250	1,284,410	1,207,020	2,531,680	60,915	819,700	351,700	290,785	1	9.7	-
						2,469,680*			284,025*		1	10.4*	-
Plan Microfilming	34,400	50,000	84,400	114,135	606,555	805,150	10,400	170,000	84,500	74,100	0	10.8	see users
Standardised Shorter Documents and Cover Page	142,000	35,000	177,000	61,000	0	238,000	0	291,000	218,250	0	1.1	see users	
Property Map Preparation and Maintenance	147,300	278,345	425,645	7,376,600	3,532,935	11,355,170	275,760	532,500	375,000	99,240	0	116.4	1,200,000
Local Office Cash Register Data Capture and Enquiry Page	74,000	42,500	116,500	103,300	1,591,300	1,811,100	85,715	254,000	69,450	(18,265)	0	Nil	-
						1,878,550**			(25,265)**		0	Nil	-
Basic Operational Activity Reporting	34,000	2,250	36,250	2,000	180,000	218,250	45,675	150,000	78,000	32,325	0	6.8	-
Cross-reference Abstract Entry Data Capture (25)	47,700	8,750	56,450	65,850	125,200	247,500	33,475	0	0	(33,475)	0	Nil	-
Cross-reference Indexes	40,250	0	40,250	474,000	0	514,250	15,650	10,000	0	(15,650)	0	Nil	-
Computerised Write of Election System	90,750	23,000	113,750	7,000	0	120,750	28,670	60,000	30,000	1,330	0	91	350,000(fms)
Complete Abstract Entry Data Capture for all Registrations	24,300	2,250	26,550	29,850	77,200	134,100	26,420	0	0	(26,420)	0	Nil	-
***Regional Processing For:													
Complete Computerised Index Data Base	73,500	0,750	82,250	2,700	0	84,950	35,400	0	0	(35,400)	0	Nil	-
Computer Produced Index Pages	28,500	16,750	45,250	8,300	0	51,550	101,700	905,000	550,000	448,300	0	11	-
Complete Operational Activity Reporting	14,750	2,250	17,000	0	0	17,000	33,750	55,000	27,000	(6,750)	0	Nil	-
Selective and Aggregate Reporting for Bulk Users	79,450	9,900	89,350	0	0	89,350	9,650	0	0	(9,650)	0	Nil	-
Sub-Total	184,200	37,650	221,850	11,000	0	242,850	180,500	960,000	577,000	396,500	0	6	-
***Centralized Processing For:													
Complete Computerised Index Data Base	73,500	0,750	82,250	0	0	82,250	89,025	0	0	(89,025)	0	Nil	-
Computer Produced Index Pages (Printed)	26,500	16,750	43,250	8,900	0	49,750	111,835	905,000	550,000	438,175	0	11	-
Complete Operational Activity Reporting	14,750	2,250	17,000	0	0	17,000	33,750	55,000	27,000	(16,750)	0	Nil	-
Selective and Aggregate Reporting for Bulk Users	79,450	9,900	89,350	0	0	89,350	18,130	0	0	(18,130)	0	1.2	-
Sub-Total (Printed)	184,200	37,650	221,850	8,900	0	238,250	223,250	960,000	577,000	344,750	0	7	-
Sub-Total (COM)	242,700	42,150	284,850	8,750	0	316,100	89,275	960,000	577,000	(262,275)	0	Nil	-

* Includes Microfilm Processing

** Includes Intelligent Cash Register for Balancing Only

*** Either Regional or Central processing is required - not both.

Table 5

PREFERRED SYSTEM IMPROVEMENTS

PREFERRED IMPROVEMENT	Total One-Time Cost	Benefits (Yearly)		Delay Factor (Years)	Pay- Back (Years)
		Realizable	Net		
Legal Changes not Requiring Equipment Changes	633,000	360,000	360,000	1	2.8
Intelligent Cash Register for Balancing Functions Only	176,000	11,250	(9,000)	0	-
Microfilm Processing	138,000	Ø	(6,760)	0	-
Automated Cartridge Microfilm System	2,531,680	351,700	290,785	1	9.7
Plan Microfilming	805,150	84,500	74,100	0	10.8
Standardized Shorter Documents and Cover Page	238,000	218,250	218,250	0	1.1
Property Map Preparation and Maintenance	11,355,170	375,000	99,240	2	116.4
Local Office Cash Register Data Capture and Enquiry Pads	1,811,100	69,450	(16,265)	0	-
Basic Operational Activity Reporting	218,250	78,000	32,325	0	6.8
Cross-reference Abstract Entry Data Capture (25%)	247,500	Ø	(33,475)	0	-
Cross-reference Indexes	474,000	Ø	(15,650)	0	-
Computerized Writs of Execution Systems	120,750	30,000	1,330	0	91
Complete Abstract Entry Data Capture for all Registrations	134,100	Ø	(26,420)	0	-
Complete Computerized Index Data Base (Regional)	84,950	Ø	(35,400)	0	-
Computer Produced Index Pages (Regional)	51,550	550,000	448,300	0	.11
Complete Operational Activity Reporting (Regional)	17,000	27,000	(6,750)	0	-
Selective and Aggregate Reporting for Bulk Users (Regional)	89,350	Ø	(9,650)	0	-
Total for Selected Improvements	19,125,550	2,155,150	1,364,960		14.0

IMPLEMENTATION STRATEGY

In this Chapter, the implementation strategy is defined. The timing of capital outlays and benefit stream realization is finalized. The resulting costs and benefits are analyzed over a 15-year time horizon.

In the previous Chapter, 17 potential improvements were selected for implementation. Some improvements resulted in a net cost. Others resulted in a net benefit. Some had very short pay-back periods. Others had long or non-existent pay-backs.

Because some improvements depend upon implementation of others, implementation strategy is constrained to a certain extent. This results in five major implementation packages:

- legal system improvements;
- microfilm document and plan systems;
- certification in the registry system;
- computerized indexes, property maps and activity reports; and
- selective and aggregate information reports.

A. THE CALENDARIZATION OF PREFERRED SYSTEM IMPROVEMENTS

The costs and benefits of each implementation package must be calendarized. A cost/benefit summary (in thousands of dollars) Figure 36, page 291, has been developed to show the yearly financial impact of implementing each package. if the program is fully funded and all improvements are introduced as quickly as possible.

The content of this form should be described briefly.

A time horizon of 15 years has been allowed. Implementation of all the preferred improvements will be complete at the end of year 14. In the 15th and succeeding years, all costs will have stabilized to a continuous value.

The development, pilot project testing, implementation, operating cost and realizable benefits headings correspond to those from the detailed analysis documentation and cost benefit summary sheets. In each case, the total staff and equipment costs and benefits have been shown both individually and in total.

FIGURE 36- COST BENEFIT SUMMARY FORM

COST - BENEFIT SUMMARY (IN \$1,000's)

COST AND BENEFITS	YEARS														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DEVELOPMENT															
STAFF															
EQUIPMENT															
TOTAL															
PILOT PROJECT TESTING															
STAFF															
EQUIPMENT															
TOTAL															
IMPLEMENTATION															
STAFF															
EQUIPMENT															
TOTAL															
OPERATING COSTS															
STAFF															
EQUIPMENT															
TOTAL															
SUBTOTAL - COSTS															
STAFF															
EQUIPMENT															
TOTAL															
REALIZEABLE BENEFITS															
STAFF															
EQUIPMENT															
TOTAL															
COST AVOIDANCE															
STAFF															
EQUIPMENT															
TOTAL															
SUBTOTAL - BENEFITS															
STAFF															
EQUIPMENT															
TOTAL															
TOTAL															
STAFF															
FRINGE BENEFITS															
EQUIPMENT															
NET BENEFIT (COST)															
CUMULATIVE BENEFIT															
DISCOUNTED CASH FLOW (AT 9%)															
CUMULATIVE D.C.F.															
D.C.F. INCLUDING INFLATION (AT 6%)															
CUMULATIVE D.C.F.															
TOTALS															

Cost avoidance was not recognized in the preliminary analysis of alternatives. Cost avoidance results from the elimination of the need to add staff or equipment as the registration volume increases. It can be properly analyzed only after the improvement has been calendarized. Only full complement positions were taken into account in determining realizable benefits. However, part complement position savings resulting from implementation of each package have also been identified. Part complement position savings are sufficient to avoid the addition of staff to handle volume increases over the full 15-year implementation period. This results in some underutilization of staff during the 8th to 12th year and full utilization of staff in year 15.

Sub-totals for both costs and benefits have been included. The row labelled "Total" shows the net position for both staff and equipment and allows calculation of fringe benefits, which are taken as 13.2% of the staff net cost or benefit.

The next three headings analyze the financial impact of the improvement package. The net benefit (cost)/cumulative benefit figures are equivalent to calculation of the impact and pay-back period for that improvement in 1977 dollars.

The discounted cash flow (at 9%)/cumulative D.C.F. analyzes the improvements based on a cost of capital of 9%. In this analysis, the current bond rate (9%) was taken as a proxy for the provincial cost of capital.

The last analysis calculates the discounted cash flow (at 9%) including inflation (at 6%) and the cumulative discounted cash flow under these conditions. The effect of a 6% inflation rate on staff salaries and equipment costs as well as a discount for the anticipated cost of capital has been included as part of this analysis.

In the following sections of this Chapter, the content and implementation strategy for each of the five major system improvement packages are discussed.

B. LEGAL SYSTEM IMPROVEMENTS

This package includes:

- legal changes not requiring equipment changes; and
- the introduction of standardized shorter documents and the cover page concept.

The costs and benefits are shown in Figure 37, page 293.

FIGURE 37 - LEGAL SYSTEM IMPROVEMENTS

COST — BENEFIT SUMMARY (IN \$1,000+)

PACKAGE: LEGAL SYSTEM IMPROVEMENTS

COST AND BENEFITS		YEARS														TOTALS
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
DEVELOPMENT																
STAFF	120	112														232
EQUIPMENT																
TOTAL	120	112														232
PILOT PROJECT TESTING																
STAFF																15
EQUIPMENT																5
TOTAL																20
IMPLEMENTATION																
STAFF																15
EQUIPMENT																61
TOTAL																76
OPERATING COSTS																
STAFF																
EQUIPMENT																
TOTAL																
SUBTOTAL - COSTS	120	127	15													
STAFF	120	132	76													262
EQUIPMENT																66
TOTAL																328
REALIZABLE BENEFITS																
STAFF																
EQUIPMENT																
TOTAL																
COST AVOIDANCE																
STAFF																
EQUIPMENT																
TOTAL																
SUBTOTAL - BENEFITS																
STAFF																
EQUIPMENT																
TOTAL																
TOTAL																
STAFF																
EQUIPMENT																
TOTAL																
NET BENEFIT (COST)																
CUMULATIVE BENEFIT																
DISCOUNTED CASH FLOW (AT 9%)																
CUMULATIVE D.C.F																
D.C.F. INCLUDING INFLATION (AT 6%)																
CUMULATIVE D.C.F																

Development and testing of these legal changes would be completed within the first two years of the program. Implementation of the changes would occur on a province-wide basis at the beginning of the 3rd year. There are no on-going operating costs for these changes. No additional staff or equipment is required.

Because implementation occurs across the Province, the realizable benefit stream in terms of staff savings takes effect in year 3. These savings result primarily from a reduction in the number of documents which must be drawn and refiled for searching and from reduced clerical time for document examination and abstracting.

Cost avoidance for staff results because no additional staff is required to cope with increasing volumes. Cost avoidance for equipment is due to reduced filing and microfilming costs with shorter documents.

The package is extremely attractive in terms of rapid and substantial payback. The break-even point on a cumulative or discounted basis occurs at the end of year 2. Even on a full discounted basis, a cumulative benefit in excess of 4 million dollars is achieved over the 15-year implementation period.

In addition to substantial systems savings, large benefits will be realized by system users. It is expected that system users would achieve a benefit of \$7,150,000 per year after introduction of this improvement package.

It is recommended that implementation of this package commence immediately.

C. MICROFILM DOCUMENT AND PLAN SYSTEMS

This package improves the record management systems for land registration. See Figure 38, page 295, Cost/Benefit Summary.

Three regional centres will be equipped to process microfilm. This provides the processing capability for the increased volumes expected during the implementation period.

Development and testing of the microfilm systems is completed in the first year and a half of the program. Implementation is expected to take about two years. The microfilming equipment would be installed in all three regional centres in the first year. Conversion to a microfilm record system would then occur on an office-by-office basis over the two-year period.

This results in a gradual build up of realizable benefits during years 2, 3 and 4 of the program. Similarly, there is a corresponding increase in cost avoidance savings during the same period.

FIGURE 38 - MICROFILM DOCUMENT AND PLAN SYSTEMS

COST — BENEFIT SUMMARY (IN \$1,000's)

MICROFILM DOCUMENT
PACKAGE: AND PLAN SYSTEMS

COST AND BENEFITS	YEARS															TOTALS
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
DEVELOPMENT																
STAFF																
EQUIPMENT																
TOTAL	50															60
	50															60
PILOT PROJECT TESTING																
STAFF																
EQUIPMENT																
TOTAL	35															35
	40															40
IMPLEMENTATION																
STAFF																
EQUIPMENT																
TOTAL	92	75	3		2											172
	745	66	33		33											1622
	837	853	69	35												1794
OPERATING COSTS																
STAFF																
EQUIPMENT																
TOTAL	4	7	7	7	7	7	7	7	7	7	7	7	7	7	7	95
	40	80	80	80	80	80	80	80	80	80	80	80	80	80	80	1080
	44	87	87	87	87	87	87	87	87	87	87	87	87	87	87	1175
SUBTOTAL - COSTS																
STAFF	95	96	82	10	9	7	7	7	7	7	7	7	7	7	7	362
EQUIPMENT	5	785	858	146	113	80	80	80	80	80	80	80	80	80	80	2707
TOTAL	100	881	940	156	122	87	87	87	87	87	87	87	87	87	87	3069
REALIZABLE BENEFITS																
STAFF	55	118	182	237	237	237	237	237	237	237	237	237	237	237	237	2962
EQUIPMENT		2	20	37	40	40	40	40	40	40	40	40	40	40	40	459
TOTAL	55	120	202	274	277	277	277	277	277	277	277	277	277	277	277	3421
COST AVOIDANCE																
STAFF	4	9	14	14	20	21	22	23	24	26	27	28	30	31	33	312
EQUIPMENT		4	18	18	18	188	188	188	188	188	188	188	188	188	188	2350
TOTAL	4	103	202	202	208	209	210	211	212	214	215	216	218	219	221	2662
SUBTOTAL - BENEFITS																
STAFF	59	127	196	225	257	258	259	260	261	263	264	265	267	268	270	3274
EQUIPMENT		96	208	228	228	228	228	228	228	228	228	228	228	228	228	2809
TOTAL	59	223	404	453	485	486	487	488	489	491	492	493	495	496	498	6083
TOTAL																
STAFF	(95)	(37)	45	186	248	251	252	253	254	256	257	258	260	261	263	2912
EQUIPMENT	(13)	(5)	6	25	33	33	33	33	34	34	34	34	34	34	35	384
FRINGE BENEFITS	(51)	(785)	(762)	62	112	148	148	148	148	148	148	148	148	148	148	102
EQUIPMENT																
TOTAL	(113)	(827)	(711)	273	393	432	433	434	436	438	439	440	442	443	446	3398
NET BENEFIT (COST)																
CUMULATIVE BENEFIT	(113)	(940)	(1651)	(1378)	(985)	(553)	(120)	314	750	1188	1627	2067	2509	2952	3398	3398
DISCOUNTED CASH FLOW (AT 9%)																
CUMULATIVE D.C.F.	(104)	(696)	(549)	193	255	258	237	218	201	185	170	156	144	133	122	923
	(104)	(800)	(1349)	(1156)	(901)	(643)	(406)	(188)	13	198	368	524	668	801	923	923
D.C.F. INCLUDING INFLATION (AT 6%)																
CUMULATIVE D.C.F.	(110)	(780)	(651)	243	339	362	352	343	334	326	317	309	301	293	286	2264
	(110)	(890)	(1541)	(1298)	(959)	(597)	(245)	98	432	758	1075	1384	1685	1978	2264	2264

The benefits of this package result primarily from staff reductions through elimination of the copying function and a greatly reduced filing and retrieval time. If users are given direct access to the document microfilm cartridges, staff filing and retrieval time could be almost eliminated. However, continued system control over records and, therefore, staff filing and retrieval of cartridges have been assumed.

Potential equipment savings result from two factors. The need to purchase additional filing cabinets for paper documents is eliminated. The floor space required for document filing is significantly reduced.

The combination of heavy expenditures early in the program and a gradual build up in benefit realization produces a pay-back for the improvement at the end of 7 years or, if discounted at 9%, at the end of 8 years.

At the end of the 15-year period, cumulative savings of between \$900,000 to \$3,400,000 are realized. This improvement package is, therefore, justified on the basis of system savings alone and is recommended for implementation.

D. CERTIFICATION IN THE REGISTRY SYSTEM

This improvement package (see Figure 39, page 297) results in substantial user benefits.

Certification in the registry system under The Certification of Titles Act provides an assured statement of ownership and encumbrances at a stated point in time. It eliminates the need for users to search beyond the point of certification. It can dramatically shorten and simplify searching. Certification of subdivision plans also eliminates the need to search in the unparcelized index books. This further reduces search time and system workload.

The land registration system benefits from a reduced staff workload in filing and retrieving. Also, the number of older records that must be retained in the office is reduced.

However, it will require about one year to develop and four years to implement this improvement. Development effort is primarily legal. Implementation effort is primarily clerical. A certification team is required to examine plans and documents and prepare statements of ownership and encumbrances.

The system benefit stream of certification will not be realized immediately. Only after certification of some areas is complete do benefits become significant. Thus, a gradual increase in benefits will occur during years 3, 4 and 5 for implementation of this package.

FIGURE 39 - CERTIFICATION IN THE REGISTRY SYSTEM

COST — BENEFIT SUMMARY (IN \$1,000's)

CERTIFICATION IN
THE REGISTRY SYSTEM

PACKAGE:

COST AND BENEFITS	YEARS															TOTALS
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
DEVELOPMENT																
STAFF	15															15
EQUIPMENT																
TOTAL	15															15
PILOT PROJECT TESTING																
STAFF																
EQUIPMENT																
TOTAL																
IMPLEMENTATION																
STAFF		132	132	132	132											528
EQUIPMENT																
TOTAL		132	132	132	132											528
OPERATING COSTS																
STAFF																
EQUIPMENT																
TOTAL																
SUBTOTAL - COSTS																
STAFF	15	132	132	132	132											543
EQUIPMENT																
TOTAL	15	132	132	132	132											543
REALIZABLE BENEFITS																
STAFF			2	5	7	9	9	9	9	9	9	9	9	9	9	104
EQUIPMENT																
TOTAL			2	5	7	9	9	9	9	9	9	9	9	9	9	104
COST AVOIDANCE																
STAFF			1	2	4	5	5	6	6	6	7	7	7	7	8	72
EQUIPMENT																
TOTAL			1	2	4	5	5	6	6	6	7	7	7	7	8	72
SUBTOTAL - BENEFITS																
STAFF			3	7	11	14	14	15	15	15	16	16	16	17	17	176
EQUIPMENT																
TOTAL			3	7	11	14	14	15	15	15	16	16	16	17	17	176
TOTAL	(15)	(132)	(129)	(125)	(121)	(14)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(150)
STAFF	(2)	(17)	(17)	(17)	(17)											
FRINGE BENEFITS																
EQUIPMENT																
NET BENEFIT (COST)	(17)	(149)	(146)	(142)	(138)	(16)	(16)	(17)	(17)	(17)	(18)	(18)	(18)	(19)	(19)	(417)
CUMULATIVE BENEFIT	(17)	(166)	(312)	(454)	(592)	(576)	(560)	(543)	(526)	(509)	(491)	(473)	(455)	(436)	(417)	(417)
DISCOUNTED CASH FLOW (AT 9%)	(16)	(125)	(113)	(101)	(90)	(10)	(9)	(9)	(8)	(7)	(7)	(6)	(6)	(6)	(5)	(372)
CUMULATIVE D.C.F.	(16)	(141)	(254)	(355)	(445)	(435)	(426)	(417)	(409)	(402)	(395)	(389)	(383)	(377)	(372)	(372)
D.C.F. INCLUDING INFLATION (AT 6%)	(16)	(140)	(134)	(126)	(119)	(13)	(13)	(13)	(13)	(13)	(13)	(13)	(12)	(13)	(12)	(407)
CUMULATIVE D.C.F.	(16)	(156)	(290)	(416)	(535)	(522)	(509)	(496)	(483)	(470)	(457)	(444)	(432)	(419)	(407)	(407)

Since the benefit stream is relatively small, a net cost to the system results even at the end of the 15-year implementation period. However, this cost is relatively low. Certification simplifies the computerization package. It also produces a realizable benefit of about \$750,000 per year for system users. Therefore, implementation of the package is recommended.

E. COMPUTERIZED INDEXES, PROPERTY MAPS AND ACTIVITY REPORTS

This section deals with computerization of land registration information. (See Figure 40, page 299.)

Computers will be used for:

- property map preparation and maintenance; and
- local office automation.

As part of the property mapping process, unique land parcel identifiers would be assigned. Once a unique number has been assigned to each land parcel, computerized processing of land parcel information in each local office becomes possible.

Since the original form of documents and plans must be preserved, a microfilm, rather than a computerized system is appropriate in that area. The original form of the record need not be preserved in the case of indexes. Therefore, computerized processing should be considered for the index records.

Computerized processing could take place at:

- the local offices;
- regional centres; or
- a central site.

Centralized processing is not recommended. Communications costs to meet the required service times for some functions would be unacceptably high.

Some services do not require immediate availability of information. However, even on a batch processing basis, the centralized computer processing option is more costly. Therefore, the use of centralized computers for any land registration system data processing is not recommended.

COMPUTERIZED INDEXES, PROPERTY MAPS AND ACTIVITY REPORTS

COST — BENEFIT SUMMARY (IN \$,000's)

COMPUTERIZED INDEXES, PROPERTY
MAPS AND ACTIVITY REPORTS

COST AND BENEFITS		YEARS														TOTALS
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DEVELOPMENT	STAFF	174	235				220	242	242	242	242	242	86	65	43	22
	EQUIPMENT	13	10				593	595	595	595	595	521	10	8	5	3
	TOTAL	187	245				813	837	837	837	837	763	96	73	48	25
PILOT PROJECT TESTING	STAFF		28	49												127
	EQUIPMENT		240													220
	TOTAL		268	49												347
IMPLEMENTATION	STAFF												70%			30%
	EQUIPMENT															
	TOTAL															
OPERATING COSTS	STAFF		6	20	38	57	77	98	119	140	161	182	193	196	198	1684
	EQUIPMENT		16	47	109	120	145	170	195	220	241	244	249	253	257	2361
	TOTAL		22	67	147	177	222	268	314	360	401	426	443	449	455	4045
SUBTOTAL - COSTS	STAFF	174	319	233	215	256	297	340	361	382	403	424	279	261	241	221
	EQUIPMENT	13	246	737	697	685	713	740	765	790	815	762	254	257	258	7992
	TOTAL	187	565	970	912	941	1010	1080	1126	1172	1218	1186	533	518	499	481
REALIZABLE BENEFITS	STAFF			40	230	424	618	812	1006	1200	1394	1588	1704	1746	1746	14254
	EQUIPMENT			40	230	424	618	812	1006	1200	1394	1588	1704	1746	1746	14254
	TOTAL			80	460	848	1236	1624	2012	2400	2788	3176	3408	3492	3492	28508
COST AVOIDANCE	STAFF		3	13	25	38	52	68	86	104	125	141	151	159	167	1132
	EQUIPMENT		3	13	25	38	52	68	86	104	125	141	151	159	167	1132
	TOTAL		6	26	63	96	130	176	212	248	290	332	342	348	354	2264
SUBTOTAL - BENEFITS	STAFF			43	243	449	656	864	1074	1286	1498	1713	1845	1897	1905	15386
	EQUIPMENT			43	243	449	656	864	1074	1286	1498	1713	1845	1897	1905	15386
	TOTAL			86	486	898	1312	1728	2148	2572	2996	3426	3690	3792	3810	30772
TOTAL	STAFF	(174)	(319)	(190)	(28)	(193)	(359)	(524)	(713)	(904)	(1095)	(1289)	(1566)	(1636)	(1654)	(1692)
	FRINGE BENEFITS	(231)	(422)	(251)	(4)	(25)	(47)	(53)	(63)	(79)	(94)	(107)	(126)	(136)	(149)	(162)
	EQUIPMENT	(13)	(246)	(737)	(693)	(682)	(703)	(734)	(758)	(782)	(806)	(826)	(843)	(846)	(847)	(849)
NET BENEFIT (COST)		(210)	(607)	(952)	(663)	(464)	(303)	(141)	49	241	434	708	1530	1606	1637	1666
		(210)	(607)	(952)	(663)	(464)	(303)	(141)	49	241	434	708	1530	1606	1637	1666
		(210)	(607)	(952)	(663)	(464)	(303)	(141)	49	241	434	708	1530	1606	1637	1666
DISCOUNTED CASH FLOW (AT 9%)		(197)	(511)	(735)	(470)	(302)	(181)	(77)	25	111	183	274	544	524	490	457
		(197)	(511)	(735)	(470)	(302)	(181)	(77)	25	111	183	274	544	524	490	457
		(197)	(511)	(735)	(470)	(302)	(181)	(77)	25	111	183	274	544	524	490	457
D.C.F. INCLUDING INFLATION (AT 6%)		(197)	(708)	(1443)	(1913)	(2215)	(2396)	(2473)	(2448)	(2337)	(2154)	(1880)	(1336)	(812)	(322)	135
		(197)	(708)	(1443)	(1913)	(2215)	(2396)	(2473)	(2448)	(2337)	(2154)	(1880)	(1336)	(812)	(322)	135
		(197)	(708)	(1443)	(1913)	(2215)	(2396)	(2473)	(2448)	(2337)	(2154)	(1880)	(1336)	(812)	(322)	135
CUMULATIVE D.C.F.		(204)	(572)	(871)	(589)	(400)	(254)	(115)	39	185	323	511	1073	1094	1082	1069
		(204)	(572)	(871)	(589)	(400)	(254)	(115)	39	185	323	511	1073	1094	1082	1069
		(204)	(572)	(871)	(589)	(400)	(254)	(115)	39	185	323	511	1073	1094	1082	1069
CUMULATIVE D.C.F.		(204)	(776)	(1647)	(2236)	(2636)	(2890)	(3005)	(2966)	(2781)	(2458)	(1947)	(874)	220	1302	2371
		(204)	(776)	(1647)	(2236)	(2636)	(2890)	(3005)	(2966)	(2781)	(2458)	(1947)	(874)	220	1302	2371
		(204)	(776)	(1647)	(2236)	(2636)	(2890)	(3005)	(2966)	(2781)	(2458)	(1947)	(874)	220	1302	2371

A total of 9 regional computer systems are proposed. Initially, each system would be used for property map preparation. Once the initial property maps are prepared, the regional systems would be used for property map maintenance, index production and information reporting. Index production and information reporting would be done on a batch, rather than an on-line basis. Immediately available information requires the use of terminals and communication lines from local offices to regional centres. It is less costly and more reliable for each local office to be provided with its own stand-alone minicomputer system.

Introduction of computerized indexes, property maps and activity reports dramatically affects both system users and local office staff. Much of the clerical effort within the local office is eliminated. System users can easily and quickly locate land parcels and determine the status of title. The entire process of dealing with the land registration system is simplified.

Development and testing of the local office and regional computer systems would take place in the first two years of the program. Implementation requires the next 12 years to complete.

A total of 9 regional centre computers would be installed. One system would be installed in each of years 3 through 10. Within each region, the property maps for 70% of the land parcels and the local office minicomputer system would be installed in each office served by the regional centre within 1 year of regional centre computer installation. Completion of the property maps for each office requires map preparation for the remaining 30% of land parcels. For each region, this would be complete within 4 years of regional centre computer installation. Local office staff will be used for the searching necessary to complete the maps. Implementation of other improvements will have freed sufficient clerical time to allow this activity to be absorbed by existing staff in each office.

Since implementation extends over a 13-year period, there is a corresponding delay in realization of the full benefit stream from this improvement. However, benefits will be realized progressively over this period on a region-by-region basis since the majority of local office computerization takes place in the same year that a regional centre computer is installed.

Realizable benefits and cost avoidance both result primarily from a reduction in clerical activities within the local office.

System pay-back occurs at the end of year 12 or year 14, depending upon the financial analysis method chosen. In either case, a significant benefit stream continues from year 15 on. Although a large investment is required for implementation of this package, it greatly simplifies operation of the land registration system and provides significant benefits to both users and system staff. Therefore, implementation of this package is recommended.

F. SELECTIVE AND AGGREGATE INFORMATION REPORTS

The improvements described in previous sections have been concerned primarily with upgrading of existing services. Some additional services could also be offered by an improved land registration system.

The new services (see Figure 41, page 302) include:

- cross-reference indexes, to relate commonly used identifiers such as street addresses and owner names to the land parcel identifiers;
- a computerized writs of execution system, to allow judgement creditors to easily and quickly locate the lands of their debtors;
- complete operational activity reporting, to allow efficient statistical analysis of land parcel information; and
- selective and aggregate reporting for bulk users, to allow specialized searching and provide on-demand reporting of either property map or registration information.

None of these services are currently offered by the system. All depend upon computerized records for property maps and registration information. Therefore, development and implementation can occur only after computerized indexes, property maps and activity reports are in place in at least one region. The service would be extended region-by-region from year 4 to year 11 and would not be available on a province-wide basis until the beginning of year 12.

Much of the early development effort results from liaison with other affected ministries regarding changes to the writs of execution system. The majority of development and testing is completed during years 3 and 4.

The implementation program depends upon regional computer installation and, therefore, extends through years 4 to 11. Since this service is not currently offered, there are few realizable benefits. Savings from realizable benefits and cost avoidance result primarily from elimination of the writs file search in the land titles system and manual report preparation by local office staff.

FIGURE 41

SELECTIVE AND AGGREGATE INFORMATION REPORTS

COST — BENEFIT SUMMARY (IN \$1,000's)

PACKAGE: SELECTIVE AND AGGREGATE
INFORMATION REPORTS

COST AND BENEFITS		YEARS															TOTALS
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
DEVELOPMENT	STAFF																
	EQUIPMENT																
	TOTAL	6	23	106	78	17											230
PILOT PROJECT TESTING	STAFF	6	23	106	78	17											230
	EQUIPMENT																
	TOTAL																37
IMPLEMENTATION	STAFF																
	EQUIPMENT																
	TOTAL																478
OPERATING COSTS	STAFF																
	EQUIPMENT																
	TOTAL																721
SUBTOTAL - COSTS	STAFF	6	23	106	166	172	96	103	110	117	124	131	78	78	78	78	1466
	EQUIPMENT																88
	TOTAL	6	23	106	167	175	100	109	117	125	133	141	88	88	88	88	1554
REALIZEABLE BENEFITS	STAFF																
	EQUIPMENT																
	TOTAL																254
COST AVOIDANCE	STAFF																
	EQUIPMENT																
	TOTAL																73
SUBTOTAL - BENEFITS	STAFF																
	EQUIPMENT																
	TOTAL																327
TOTAL	STAFF	(6)	(23)	(106)	(165)	(167)	(86)	(88)	(90)	(92)	(94)	(94)	(36)	(32)	(30)	(30)	(1139)
	FRINGE BENEFITS	(1)	(3)	(14)	(22)	(22)	(11)	(12)	(12)	(12)	(12)	(12)	(5)	(4)	(4)	(4)	(150)
	EQUIPMENT				(1)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(10)	(10)	(10)	(10)	(88)
NET BENEFIT (COST)		(7)	(26)	(120)	(188)	(192)	(101)	(106)	(109)	(112)	(115)	(116)	(51)	(46)	(44)	(44)	(1377)
CUMULATIVE BENEFIT		(7)	(33)	(153)	(341)	(533)	(634)	(740)	(849)	(961)	(1076)	(1192)	(1243)	(1289)	(1333)	(1377)	(1377)
DISCOUNTED CASH FLOW (AT 9%)		(6)	(22)	(93)	(133)	(125)	(60)	(58)	(55)	(52)	(49)	(45)	(18)	(15)	(13)	(12)	(756)
CUMULATIVE D.C.F.		(6)	(28)	(121)	(254)	(379)	(439)	(497)	(552)	(604)	(653)	(698)	(716)	(731)	(744)	(756)	(756)
D.C.F. INCLUDING INFLATION (AT 6%)		(7)	(25)	(110)	(167)	(166)	(85)	(86)	(86)	(86)	(86)	(84)	(36)	(31)	(29)	(28)	(1112)
CUMULATIVE D.C.F.		(7)	(32)	(142)	(309)	(475)	(560)	(646)	(732)	(818)	(904)	(989)	(1024)	(1055)	(1084)	(1112)	(1112)

Since new service fee revenue has not been considered in the analysis, this improvement is shown as an increasing cost throughout the 15-year analysis period. However, a modest fee structure for each new service could be used to finance implementation of this package.

These are new services. Therefore, implementation will be primarily a policy rather than a financial decision. Since the package can be self-financing and, if desired, generate new revenue, and since significant system and user benefits will result, implementation is recommended.

G. THE OVERALL FINANCIAL IMPACT

Prior sections dealt with the financial impact of the individual improvement packages. In this section, the overall impact of implementing all five improvements is discussed.

Figure 42, page 304, Annual Cash Flow diagram, illustrates the undiscounted cash flow for each of the improvement packages over the 15-year period. The magnitude and timing of both costs and benefits are shown for each package. Positive cash flows for both legal system improvements and microfilm document and plan systems commence early in the program. The large positive cash flows associated with computerization do not commence until late in the program.

User reporting has a negative cash flow. However, this is small in comparison to both the associated implementation cost and the benefit streams for the other improvements.

Figure 43, page 305, The Overall Cost/Benefit Summary, consolidates the cost/benefit information for each of the five improvement packages. The financial impact of implementing all five packages as quickly as possible is illustrated. In terms of system savings, the implementation cost is fully recovered in the ninth year. On a cumulative basis, considering both inflation and the cost of capital, a system operating benefit in excess of \$10,000,000 is achieved over the 15-year period.

A graphic representation of the overall financial impact on an annual cash flow basis is presented in Figure 44, page 306. Here, the three methods of financial analysis are presented. Straight cash flow is shown in the top graph. Discounting at 9% is shown in the middle section and discounting at 9% with a 6% inflation factor is shown in the bottom section.

Figure 45, page 307, illustrates the cumulative cash flow position. The break-even year is the point at which the net cost becomes a net benefit. Again, the figures are presented for undiscounted cash flow, discounted at 9% and discounted at 9% but including 6% inflation. The overall break-even point will occur in the 9th or 10th year depending upon the financial analysis method chosen.

FIGURE 42 - ANNUAL CASH FLOW (IN \$ MILLIONS)

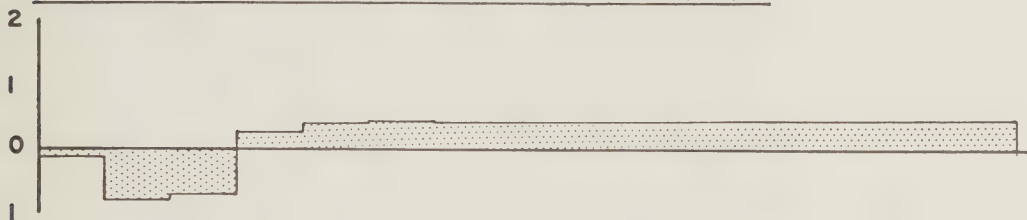
(A) LEGAL SYSTEM IMPROVEMENTS

YEAR

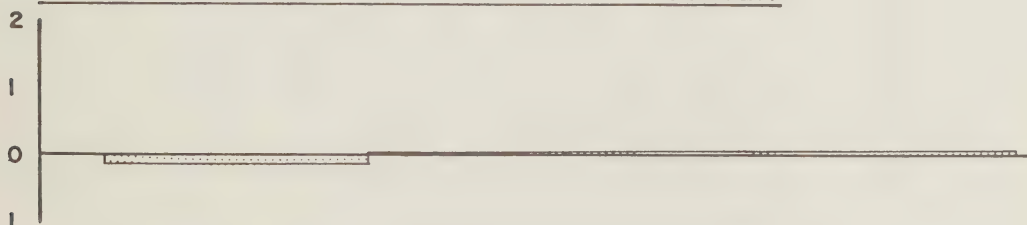
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



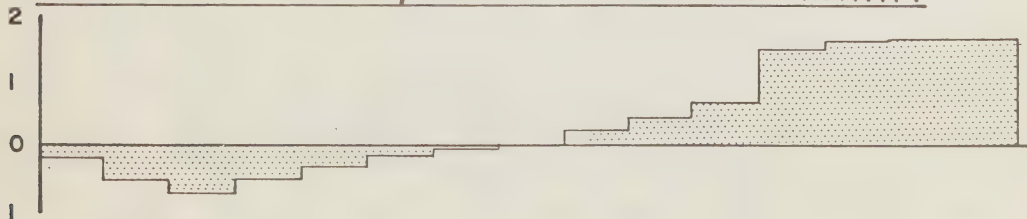
(B) MICROFILM DOCUMENT AND PLAN SYSTEMS



(C) CERTIFICATION IN THE REGISTRY SYSTEM



(D) COMPUTERIZED INDEXES, PROPERTY MAPS AND ACTIVITY



(E) SELECTIVE AND AGGREGATE INFORMATION REPORTS

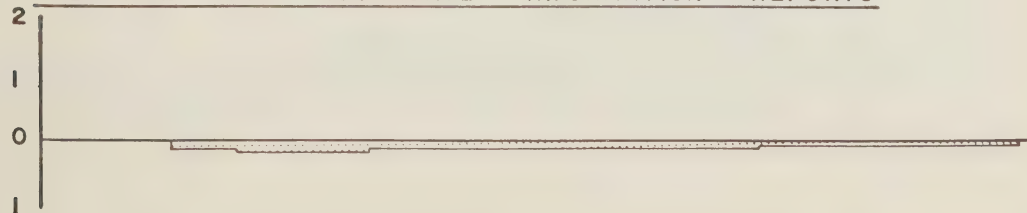


FIGURE 43

OVERALL COST BENEFIT SUMMARY

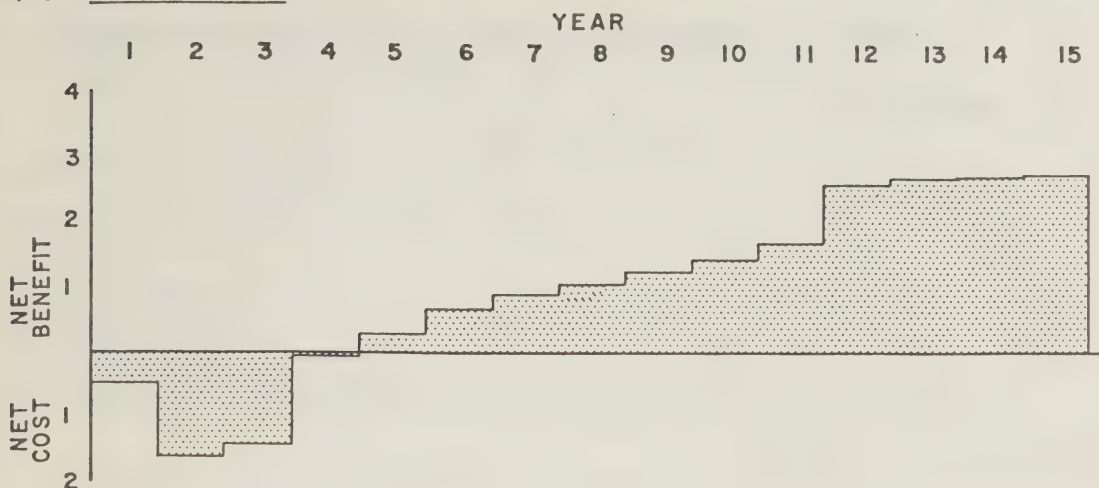
COST — BENEFIT SUMMARY (IN \$1,000's)

PACKAGE: ALL

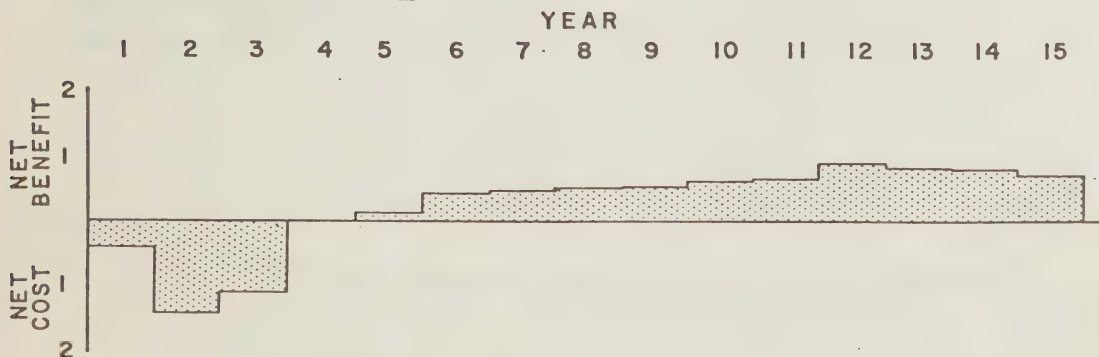
COST AND BENEFITS	YEARS														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DEVELOPMENT															
STAFF	375	370	186	78	17										946
EQUIPMENT	181	177	181	78	17										23
TOTAL	556	547	367	156	34										969
PILOT PROJECT TESTING															
STAFF	35	93	49	25	12										214
EQUIPMENT	5	225													230
TOTAL	40	318	49	25	12										444
IMPLEMENTATION															
STAFF	224	386	365	440	273	295	295	295	295	295	295	86	65	43	3379
EQUIPMENT	745	1529	654	623	593	593	595	595	595	595	521	10	8	5	3 7071
TOTAL	969	1915	1019	1063	866	890	890	890	890	890	816	96	73	48	25 10450
OPERATING COSTS															
STAFF	10	27	55	100	127	155	183	211	239	267	278	278	281	283	284
EQUIPMENT	56	127	190	178	204	231	257	283	309	331	334	339	343	347	3529
TOTAL	66	154	245	278	331	386	440	494	548	598	612	620	626	631	6029
SUBTOTAL — COSTS															
STAFF	410	697	568	523	569	400	450	478	506	534	562	364	346	336	306
EQUIPMENT	18	1036	1656	844	801	797	826	852	878	904	928	347	347	348	356
TOTAL	428	1733	2224	1367	1370	1197	1276	1330	1384	1438	1514	708	693	674	656
REALIZABLE BENEFITS															
STAFF	121	670	716	716	1182	1382	1580	1778	1976	2174	2373	2493	2537	2538	24088
EQUIPMENT	20	20	20	20	20	20	40	40	40	40	40	40	40	40	40
TOTAL	121	692	736	736	1202	1402	1620	1818	2016	2214	2413	2533	2577	2578	24128
COST AVOIDANCE															
STAFF	8	42	59	81	99	117	121	121	165	182	209	229	245	259	271
EQUIPMENT	94	256	257	257	258	258	260	261	262	263	265	265	265	265	265
TOTAL	8	136	315	338	357	377	382	382	427	445	474	494	510	524	536
SUBTOTAL — BENEFITS															
STAFF	129	712	775	807	1261	1481	1697	1915	2134	2356	2582	2722	2782	2787	2809
EQUIPMENT	96	276	298	298	298	298	300	302	302	302	305	305	305	305	305
TOTAL	129	988	1073	1105	1559	1779	1997	2216	2436	2658	2887	3027	3087	3102	3114
TOTAL															
STAFF	(410)	(568)	144	464	694	1081	1247	1421	1635	1822	2020	2358	2436	2471	2503
FRINGE BENEFITS	(155)	(175)	19	61	90	143	164	205	209	242	267	311	321	326	330
EQUIPMENT	(181)	(1036)	(1560)	(568)	(507)	(499)	(526)	(551)	(576)	(601)	(547)	(39)	(42)	(43)	(45)
NET BENEFIT (COST)	(483)	(1679)	(1397)	(43)	277	725	885	1075	1268	1463	1740	2630	2715	2754	2788
CUMULATIVE BENEFIT	(483)	(2162)	(3559)	(3602)	(3325)	(2600)	(1715)	(640)	628	2091	3831	6461	9176	11930	14718
DISCOUNTED CASH FLOW (AT 9%)	(448)	(1413)	(1079)	(31)	179	433	485	540	584	617	674	934	886	825	764
CUMULATIVE D.C.F.	(448)	(1861)	(2971)	(2792)	(2359)	(1874)	(1334)	(750)	(133)	541	1475	2361	3186	3950	3950
D.C.F. INCLUDING INFLATION (AT 6%)	(470)	(1584)	(1265)	(14)	268	641	759	893	1020	1141	1313	1905	1913	1889	1860
CUMULATIVE D.C.F.	(470)	(2054)	(3319)	(3333)	(3065)	(2424)	(1665)	(772)	248	1389	2702	4607	6520	8409	10269

FIGURE 44 - ANNUAL CASH FLOW (IN \$ MILLIONS)

(A) UNDISCOUNTED



(B) DISCOUNTED AT 9%



(C) INCLUDING 6% INFLATION

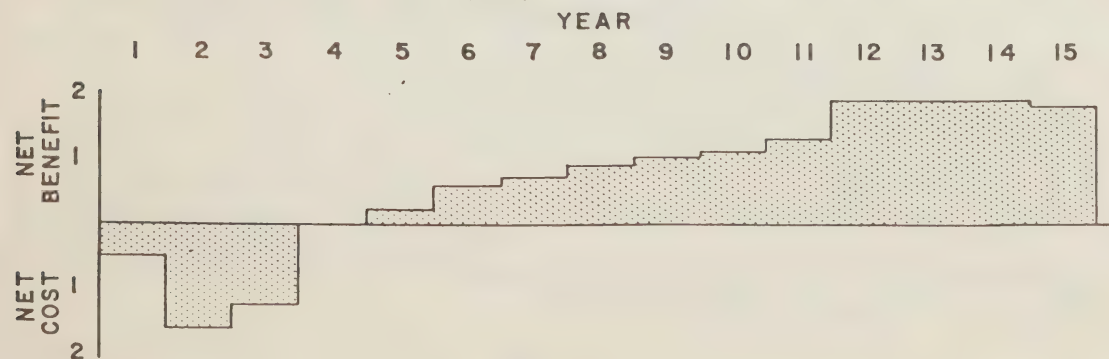
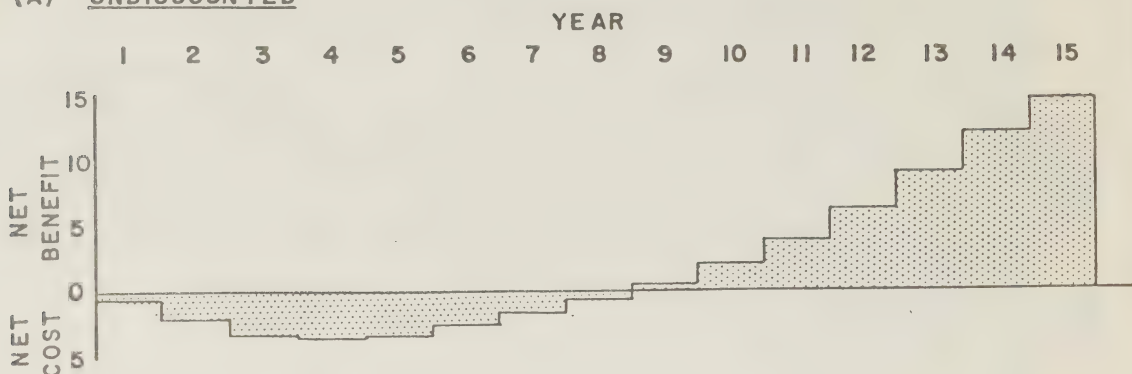
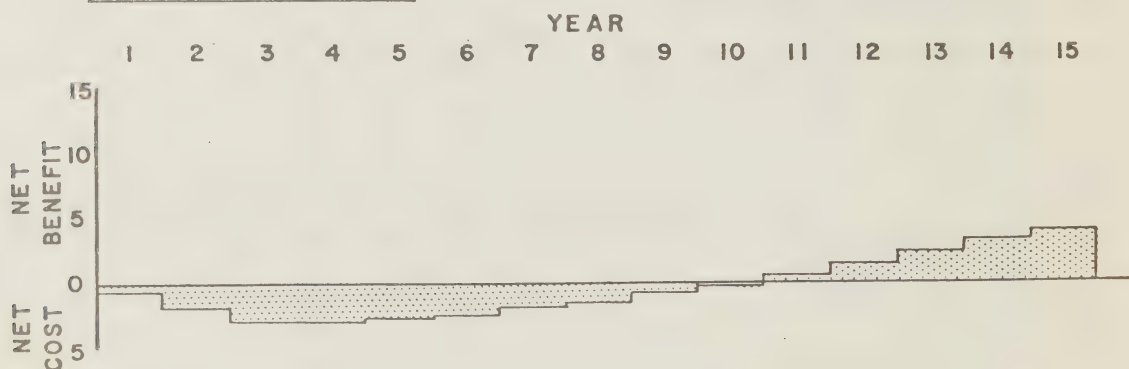


FIGURE 45 - CUMULATIVE CASH FLOW (IN \$ MILLIONS)

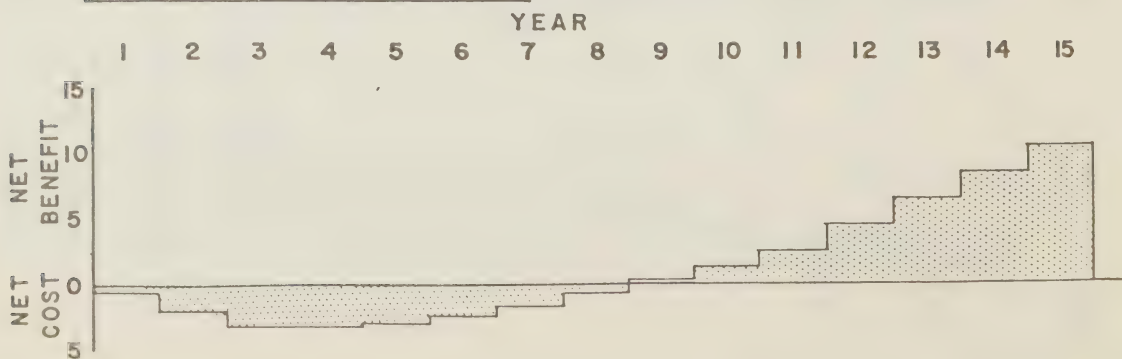
(A) UNDISCOUNTED



(B) DISCOUNTED AT 9%



(C) INCLUDING 6% INFLATION



System improvements could also be implemented on a phased start-up basis. Additional funding for development and implementation of only the legal package might be granted.

The system savings obtained from implementation of this package could then be used to finance implementation of subsequent packages. The financial impact of this implementation strategy is shown in Figure 46, page 309. It extends the implementation period over a 20-year time horizon.

These two examples set the financial and time limits for implementation discussion. The first case establishes the minimum time for system implementation. The second case establishes the minimum investment for system implementation. Within these bounds, a practical, middle course implementation strategy can be selected.

For illustration, one further analysis has been performed. Figure 47, page 310, presents the cost/benefit summary with an assumed funding of \$500,000 per year for each of the first four years of the program. In subsequent years, the savings achieved from system improvements have been used to finance completion of the improvement program.

These analyses have been concerned with the incremental effect on operating cost. The relationship of investment and benefits to operating cost for each of the three cases is shown in Figure 48, page 311. Here, the effect of each of the three implementation strategies is illustrated. In each case, it is assumed that operational cost savings are available to finance implementation. Essentially, this means that the current operating budget level is maintained until financing of the one-time costs of implementation is complete.

It must be recognized that the figures presented represent feasibility study estimates. The actual costs and benefits may vary somewhat from these estimates. Recognizing this, a conservative approach to cost/benefit analysis was taken. In areas of uncertainty, costs were increased or benefits substantially discounted. Actual costs should be lower than estimated and actual benefits should be higher. The eventual results should be more favourable than shown in the analysis.

H. THE PREFERRED IMPLEMENTATION STRATEGY

In terms of small initial investment and rapid payback, the most attractive implementation plan is that of funding the improvement program at \$500,000 per year for each of the first four years. This represents an increase of about 4% in the operating budget for the first four years and a reduction of 20% of the projected operating budget in the fifteenth year. Assuming these funds are available, implementation strategy would be as follows:

FIGURE 46 - FUNDING LEGAL PACKAGE ONLY

COST — BENEFIT SUMMARY (IN \$1,000's)

PACKAGE: ALL
Funding: (\$200,000 in years 1 and 2)

COST AND BENEFITS		YEARS																			TOTALS	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20
DEVELOPMENT	STAFF																					
	EQUIPMENT																					
	TOTAL	120	112	60		15	180	258	106	78	17											
PILOT PROJECT TESTING	STAFF																					
	EQUIPMENT																					
	TOTAL	15	35	5				78	49	25	12											
IMPLEMENTATION	STAFF																					
	EQUIPMENT																					
	TOTAL	20	40					298	49	25	12											
OPERATING COSTS	STAFF																					
	EQUIPMENT																					
	TOTAL	4																				
SUBTOTAL - COSTS	STAFF	120	127	110	96	97	322	483	478	520	435	400	450	534	562	364	346	326	306	306	306	
	EQUIPMENT	5	67	785	858	159	359	817	778	168	797	826	878	994	852	344	347	348	348	348	348	
	TOTAL	120	132	177	881	955	481	842	1295	1288	1203	1197	1276	1330	1384	1438	1414	708	693	674	656	
REALIZABLE BENEFITS	STAFF																					
	EQUIPMENT																					
	TOTAL	66	510	565	630	712	786	829	1022	1221	1419	1617	1815	2013	2211	2410	2537	2574	2575	2575		
COST AVOIDANCE	STAFF																					
	EQUIPMENT																					
	TOTAL	4	29	34	41	48	58	65	82	103	124	148	173	201	230	262	287	310	326	341	341	
SUBTOTAL -- BENEFITS	STAFF																					
	EQUIPMENT																					
	TOTAL	70	539	592	662	740	807	827	1067	1287	1506	1728	1951	2177	2404	2635	2780	2847	2864	2879	2879	
TOTAL	STAFF																					
	EQUIPMENT																					
	TOTAL	70	539	592	662	740	807	827	1067	1287	1506	1728	1951	2177	2404	2635	2780	2847	2864	2879	2879	
NET BENEFIT (COST)	STAFF																					
	EQUIPMENT																					
	TOTAL	(120)	(57)	429	503	572	418	324	379	547	852	1106	1278	1473	1671	1870	2073	2415	2501	2538	2573	
DISCOUNTED CASH FLOW (AT 9%)	STAFF																					
	EQUIPMENT																					
	TOTAL	(120)	(161)	57	66	76	55	43	50	72	112	146	169	194	221	247	274	319	330	335	340	
CUMULATIVE D.C.F.	STAFF																					
	EQUIPMENT																					
	TOTAL	(120)	(161)	57	66	76	55	43	50	72	112	146	169	194	221	247	274	319	330	335	340	
D.C.F. INCLUDING INFLATION (AT 6%)	STAFF																					
	EQUIPMENT																					
	TOTAL	(120)	(161)	57	66	76	55	43	50	72	112	146	169	194	221	247	274	319	330	335	340	
CUMULATIVE D.C.F.	STAFF																					
	EQUIPMENT																					
	TOTAL	(120)	(198)	185	52	11	503	746	669	772	1137	1679	2323	3081	3949	4920	6040	7669	9305	10917	12503	

FIGURE 47

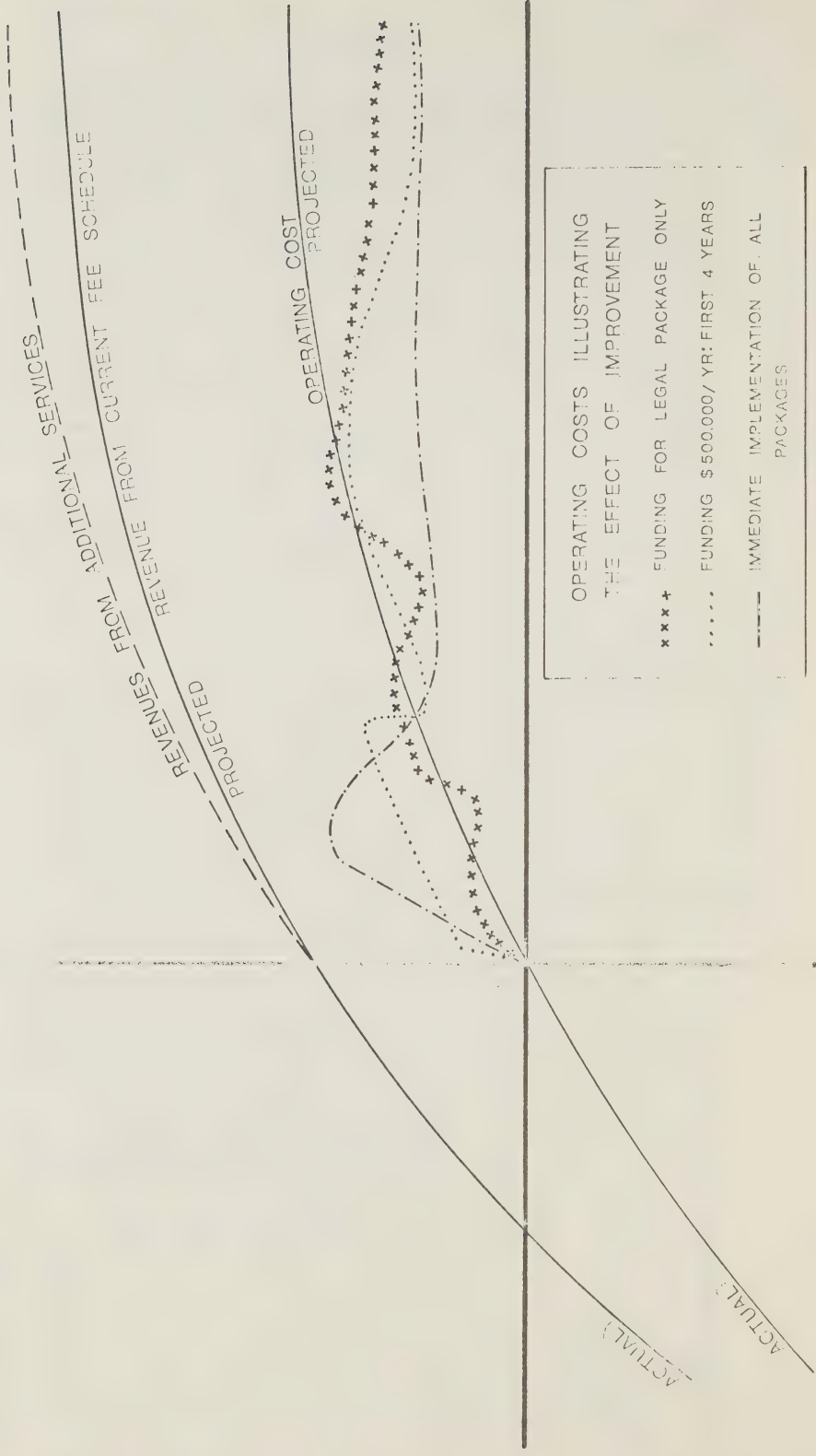
FUNDING \$500,000 / YR : FIRST 4 YEARS

COST — BENEFIT SUMMARY (IN \$1,000's)

PACKAGE: ALL
Funding: (\$500,000 in years 1 through 4)

COST AND BENEFITS	YEARS															TOTALS
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
DEVELOPMENT																
STAFF																
EQUIPMENT																
TOTAL	388	380	106	78	17											969
PILOT PROJECT TESTING																
STAFF																
EQUIPMENT																
TOTAL	40	20	347	25	12											444
IMPLEMENTATION																
STAFF																
EQUIPMENT																
TOTAL	94	584	1122	722	972	1334	1548	1570	1058	149	126	101	25			9,411
OPERATING COSTS																
STAFF																
EQUIPMENT																
TOTAL	1	45	91	131	189	278	352	473	579	604	620	626	631	631	631	5,251
SUBTOTAL - COSTS	410	454	365	308	248	377	472	726	804	795	410	399	379	306	284	6,737
STAFF	410	454	365	308	248	377	472	726	804	795	410	399	379	306	284	6,737
EQUIPMENT	410	454	365	308	248	377	472	726	804	795	410	399	379	306	284	6,737
TOTAL	410	454	365	308	248	377	472	726	804	795	410	399	379	306	284	6,737
REALIZABLE BENEFITS																
STAFF																
EQUIPMENT																
TOTAL	68	537	629	830	1010	1223	1501	1893	2096	2524	2571	2575	2577	2578	2578	22,610
COST AVOIDANCE																
STAFF																
EQUIPMENT																
TOTAL	4	52	201	271	316	346	370	407	465	479	497	510	518	534	534	4,970
SUBTOTAL - BENEFITS	72	589	830	901	1041	1270	1572	1999	2256	2698	2763	2780	2790	2807	2807	24,129
STAFF	72	589	830	901	1041	1270	1572	1999	2256	2698	2763	2780	2790	2807	2807	24,129
EQUIPMENT	72	589	830	901	1041	1270	1572	1999	2256	2698	2763	2780	2790	2807	2807	24,129
TOTAL	72	589	830	901	1041	1270	1572	1999	2256	2698	2763	2780	2790	2807	2807	24,129
TOTAL	410	454	365	308	248	377	472	726	804	795	410	399	379	306	284	6,737
STAFF	410	454	365	308	248	377	472	726	804	795	410	399	379	306	284	6,737
EQUIPMENT	410	454	365	308	248	377	472	726	804	795	410	399	379	306	284	6,737
TOTAL	410	454	365	308	248	377	472	726	804	795	410	399	379	306	284	6,737
NET BENEFIT (COST)																
CUMULATIVE BENEFIT																
DISCOUNTED CASH FLOW (AT 9%)																
CUMULATIVE D.C.F.																
D.C.F. INCLUDING INFLATION (AT 6%)																
CUMULATIVE D.C.F.																

72 74 76 78 80 82 84 86 88 90 92



OPERATING COSTS ILLUSTRATING
THE EFFECT OF IMPROVEMENT

- xxxxx FUNDING FOR LEGAL PACKAGE ONLY
- FUNDING \$500,000/YR: FIRST 4 YEARS
- IMMEDIATE IMPLEMENTATION OF ALL PACKAGES

1. Year 1

The legal improvement package requires a relatively small investment (\$328,000) for implementation. It produces large and immediate returns. It should be the first improvement package implemented. In the first year of the program, it requires funding of only \$120,000. The remaining \$380,000 can be directed towards preliminary work on the other improvement packages. These funds are sufficient to complete the first year development and testing activities for all packages as shown in the detailed cost/benefit sheets for the minimum implementation time approach.

2. Year 2

The \$500,000 funding of Year 2 would be used to complete the development and pilot project testing of the legal system improvements. Since a benefit stream from legal improvements is realized in Year 2, a net cost of \$70,000 is required to complete this activity. Thus, \$430,000 is available for implementation of the other packages.

Both the microfilm systems and the certification program would be ready for implementation at the beginning of the second year. The computerization and information reporting packages are still in the development and testing stages. The available funding must be allocated between these four improvement packages.

Both the microfilm and certification packages have relatively short implementation times. Computerization has a relatively long implementation period, but it provides the greatest reduction in workload in the local offices. Its implementation should not be delayed excessively. Therefore, the development expense for computerization and information reporting scheduled for Year 2 in the minimum implementation time approach should be completed. This requires expenditure of \$268,000. The remaining \$162,000 can be used to implement the microfilm systems in one local office and complete the certification program in eight local offices.

3. Year 3

In Year 3, funding of \$500,000 and a net benefit of \$532,000 (from legal improvements) are available. The certification program can be completed in an additional eight offices for a total of sixteen. The microfilm systems can be extended to an additional sixteen offices, for a total of seventeen.

This leaves sufficient funds to complete the development work for both computerization and reporting. In addition, the pilot project testing for computerization is completed during this year. This means that the property maps and computer equipment for one office in one region will be installed and operating by the end of Year 3.

4. Year 4

This is the last year in which funding of \$500,000 is made available. This, coupled with benefits of about \$800,000 from legal, certification and microfilm implementation programs, produces an available funding of about \$1,300,000.

Certification can be completed in an additional eight offices, for a total of 24. The microfilm system can be extended rapidly. An additional 28 offices, for a total of 45, can have microfilm equipment installed.

Development and pilot project activities for the information reporting systems can be performed as scheduled in the minimum implementation time approach. A further two offices, for a total of three, would have property maps and local office computer equipment in place.

The first regional computer configuration, installed as the pilot system, would now be processing information for a total of three offices. The small pilot project configuration would no longer be adequate. Therefore, some additional capability must be added to this first regional computer during Year 4.

5. Year 5

This is the first year in which no additional funding is available. All implementation activity must be financed from savings generated by improvements already in place. On this basis, a total of about \$900,000 is available.

In Year 5, certification is completed in another eight offices. About half the Province (32 offices) will have been completed by this time. The microfilm system is extended to another 14 offices, for a total of 59.

The development and pilot project activities for information reporting are completed in Year 5. The remaining four offices in the first computer region are provided with property maps and local office computer equipment. The first regional computer system is, therefore, fully operational and supporting seven offices by the end of the year.

6. Year 6

The benefit streams produced by the installed improvement packages produce about \$1,200,000 to fund the implementation activities for Year 6.

Certification proceeds in another eight offices, for a total of 40 offices completed at the end of Year 6. The remaining six offices are converted to the microfilm systems, completing the microfilm program this year.

The conversion effort now concentrates on computerization of the offices. The reporting systems can be implemented for the first regional computer. A second regional computer system can be installed and all offices in that region provided with property maps and local office computers. A third regional computer system can be purchased. It will be needed for the major conversion effort in the succeeding years.

7. Year 7

Approximately \$1,600,000 in benefits is available for funding improvements this year.

Certification is completed in another eight offices, for a total of 48 by the end of the year. Property maps and local office computer equipment will be in place in a third region. Information reporting for the second and third regional systems can also be installed. This provides a sufficient volume of transactions to verify the suitability and usefulness of the information reporting systems.

Extension of information reporting would be dependent upon the volume of user requests. For costing purposes, conversion of one reporting region per year has been assumed from this time on.

Near the end of the year, the regional computer system equipment for the fourth regional will be purchased.

8. Year 8

A benefit stream of about \$1,900,000 is available to fund the improvement program. Certification is completed in eight more offices. The fourth and fifth regions would have property maps and local office computer equipment. The computer equipment for conversion of the sixth region would be purchased. Information reporting would be implemented in the fourth region.

9. Year 9

A benefit stream of about \$2,400,000 is available in Year 9.

The certification program is completed this year. The sixth and seventh regions would be computerized and the equipment purchased for the eighth region. Reporting is installed in the fifth region.

10. Year 10

About \$2,700,000 in benefits has been generated by installed packages.

The last two computerized regions are installed this year. Information reporting for the sixth region is installed.

By this year, the benefit stream realized from improvements has not only repaid the initial \$2,000,000 investment but also broken even in terms of implementation expense. In all subsequent years, the program will provide a net benefit of increasing magnitude.

11. Year 11

By Year 11, the improvements, with the exception of information reporting, have been completed. Some work also remains in adding the last 30% of properties to the property mapping system. This program is not complete until Year 14. The information reporting systems is not fully complete until Year 13.

However, increasing benefit streams are being realized from this point on. As is evident from the financial analysis, implementation of the improvement packages is cost justified. On a discounted basis, including inflation, break-even and return of the initial \$2,000,000 funding is completed in Year 11. Over the 15-year analysis period, a discounted return of about \$9,000,000 is obtained.

The proposed implementation strategy is financially attractive. It is also attractive from the standpoint of implementation planning. The legal improvements are implemented quickly. Microfilm systems are tested in one office and then implemented quickly throughout the Province. A certification team is established to perform certification in the registry system at the constant rate of eight offices per year. Computerized systems are developed and tested thoroughly in a few offices before being rapidly extended throughout the remainder of the Province. The logistics of this implementation strategy are easily controlled and within the Division's capabilities.

One further aspect of implementation strategy must be considered. This is the commitment to carry through a program once it has been started.

Flexibility of commitment takes two forms. The first is the ability to return to a previous method once a change has been initiated. The second is the ability to control the rate at which expenditures are made in implementing the program. Both factors must be considered in evaluating the implications of making improvements.

After implementation of the microfilm systems, a return to the paper system would be difficult. Much of the microfilm benefit is achieved by the removal of paper documents and plans from the local office. Recognizing this degree of commitment, the microfilm systems are implemented only in a few offices during the initial stages. For all other improvements, a reversion to the present system is possible.

The rate of expenditure can be controlled for all systems improvements. However, in practical terms, the legal system improvements do not offer this flexibility. Legal development costs are low. Implementation is on a province-wide basis. The benefits to system users and operating staff are substantial. It would serve no purpose to attempt to implement the legal improvement package on a gradual basis.

The expenditures for all other system improvements can be easily controlled. The microfilm and computer-based improvements incur expense based on the number of offices converted each year. These expenses can be controlled by controlling the rate at which offices (or regions) are converted. The certification expense is a function of the size of the team performing certification. This can be controlled, but it is unlikely that an expense of less than \$66,000 per year would be practical as a formal improvement program. Of course, certification could be performed on an informal, as-time-is-available, basis by local office staff.

Experience suggests that system users would welcome implementation of the legal, certification and information reporting packages. All represent significant and highly visible improvements.

Similarly, implementation of a computerized index should be welcomed by the users. This improvement involves little major change to the basic procedures for using the system. The changes which are visible to system users provide faster and more accurate information. The major procedural and operating changes are behind the counter and have little apparent effect on the user environment.

The one area where user resistance is conceivable is implementation of the microfilm systems. This represents a change to existing and familiar user procedures. A period of user adjustment will be required. However, experience in the Toronto and York South office indicates that user acceptance will be obtained. Proper introduction of the change will be necessary to demonstrate:

- the equipment;
- the procedures for locating documents;
- the speed at which copies can be provided; and
- the resulting benefits for both system staff and users.

A "model" office containing all regional and local office equipment should be set up during the development and testing stage. This model office system would be used to test all functions of the system prior to actual installation in an office. Of course, it can also be used to demonstrate operation of the new system to staff and the users. In this way, it could serve to assist in the introduction of each improvement.

I. ORGANIZATION, STAFFING AND FUNDING CONSIDERATIONS

Currently, the land registration system is organized on a local office, regional processing and central head office basis. This basic organizational structure is consistent with the improvement packages proposed.

Central head office functions would remain essentially as at present. Centralized computer systems have not been recommended. Changes to existing head office functions are not required. However, on a temporary basis, development and implementation groups would be added to the central organization. This staff cost has been considered in the cost/benefit analysis. Space requirements have not. However, space is not a significant factor and would not produce a noticeable effect in the analysis. The actual cost of space will vary. It depends upon the packages to be implemented and whether purchased or staff services are to be used.

Space will be required for regional centre equipment and staff. It has been determined that sufficient space would become available in each office selected as a regional centre as a result of implementation of the proposed improvement packages to house the required regional centre equipment and staff. Thus, no additional office space is required for the establishment of regional centres. However, new skills and responsibilities are associated with the required staffing. Training and staffing costs for regional centres have been included in the development of cost figures.

Local office space and staff requirements would be reduced. Microfilm and computer equipment would eliminate many of the existing clerical duties in the office. The system users would have more direct access to information. Therefore, they should be more self-sufficient. The need for trained counter staff would continue. The need for less skilled clerical complement and contract positions would diminish.

Local office staff would have a significant involvement in the implementation of improvements. The searching for completion of property mapping would be performed in the local office. No additional staff is required for this activity. Time-savings in terms of part positions, not recognized in the analysis of benefits, are sufficient to allow office staff to perform this function. Staff savings are sufficient to cope with growth in registration volume over the 15-year implementation period without complement additions.

This analysis is more meaningful when compared to the total operating cost and revenue of the land registration system. Figure 49, page 319, illustrated the actual and projected costs and revenue from the land registration system for the years 1971 through 1991. Projected operating costs increase during the first three years of implementation. Thereafter, there is a significant decrease.

The projected revenue based on the current fee schedule increases substantially in relation to the projected operating costs. In addition, revenue from additional services can be expected. This has been projected and further increases the difference between operating costs and revenue.

It should also be noted that an increase of about \$1.00 per registration could entirely fund the development and implementation of the proposed system improvements. This modest fee increase would generate revenue in excess of \$1,000,000 per year over the life of the project. Alternately, the Province could choose to increase fees coincident with installation of improved services. Again, the costs incurred would be more than offset by increased fee revenue.

FISCAL YEARS

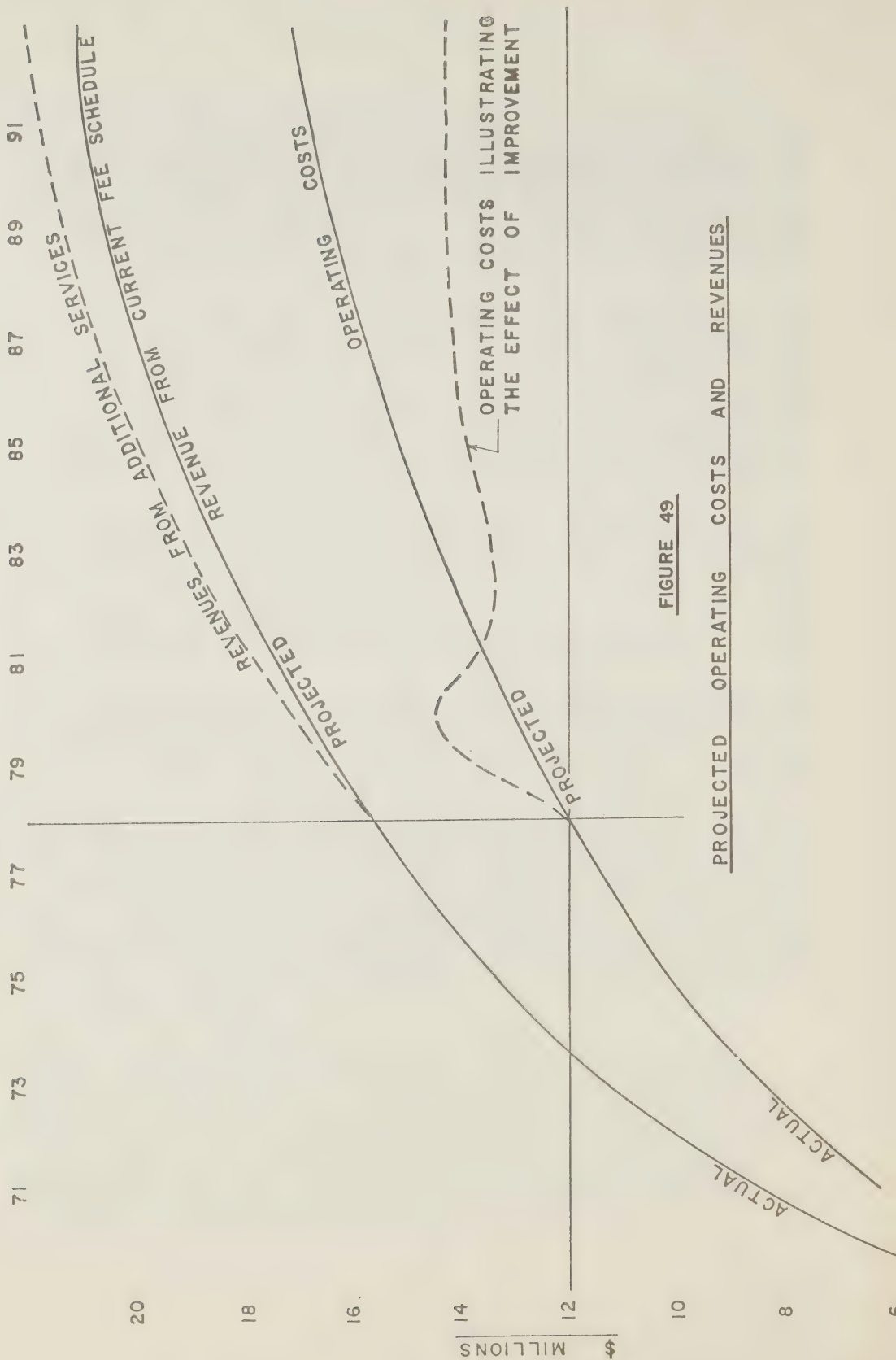


FIGURE 49

PROJECTED OPERATING COSTS AND REVENUES

THE IMPROVED LAND REGISTRATION SYSTEM AND THE
LAW REFORM COMMISSION REPORT ON LAND REGISTRATION

A. THE MAJOR LAW REFORM COMMISSION RECOMMENDATIONS

The general summary of recommendations of the Ontario Law Reform Commission Report on Land Registration (1971) is reproduced in Appendix A. It is taken directly from Chapter X (pages 80 - 84) of the Commission's report.

The major recommendations of this report were:

- an improved land titles system should be the sole system for land registration in Ontario;
- with limited exceptions, claims against land should be registered to be effective;
- a coordinate control system should be established and used for indexing parcels and to record the location of monuments; and
- a computer system should be used for land registration.

This report has documented the Ministry of Consumer and Commercials Relations' position regarding an improved land registration system. It would not be complete without a comparison of this proposed system to the Commission recommendations.

In general, the improved system satisfies many of the Commission recommendations. The major area of difference is continuation of the registry system.

B. CONTINUATION OF THE REGISTRY SYSTEM

In Chapter III of their report, the Commission recommends that an improved land titles system should be the sole system for land registration in Ontario. This report recommends improvement of both the land titles and registry systems without an immediate conversion from one to the other.

The decision to convert from the registry to the land titles system must be based on a comparison of the costs and characteristics of both. However, both systems can be improved substantially. The proposed improvements result in systems that are similar in most respects. The information required to properly compare the two systems will not be available

until after these improvements are made. Therefore, this report does not agree with the recommendation in the Commission report that no substantial changes be made to the existing systems pending the adoption of an improved system.

At least in the short term, the Province should continue to maintain two systems. If, after improvement, one system proves clearly superior, all land in the Province can be brought under that system.

Since operation of both systems will be quite similar in the future, the conversion process will be simplified. The upheaval and expense of converting to another system at this time is avoided.

C. OTHER COMMENTS ON THE LAW REFORM COMMISSION RECOMMENDATIONS

Many of the Law Reform Commission recommendations assume that a land titles system will be the sole system for land registration in Ontario. Some of the recommendations are inappropriate for an improved registry system. Therefore, this report is at variance with the basic recommendation of Chapter III of the Commission report.

However, the recommendations in Chapters IV through IX are in general agreement with this report's recommendations. Comments on each Chapter of the Commission report follow.

Chapter IV describes the basic legal framework of the improved land registration system. These characteristics are largely preserved in this report although, as was noted, some are inappropriate to the registry system. In particular, this report accepts the principle of priority of registration expressed in recommendation 10.

Chapter V of the Commission report discusses claims which need not be registered. This report has gone further in reducing the number of claims which need not be registered on title. Recommendation 7, which provides for a separate writs of execution index, has been replaced by a requirement to register writs against specific land parcels. Registration of writs eliminates the need for conducting a separate search of the writs of execution file as described in recommendation 8. Similarly, this report recommends the registration of zoning by-laws against individual land parcels rather than the maintenance of a separate index as suggested in recommendation 9. Recommendation 11 of the Commission report is considered to be the minimum acceptable solution to Planning Act subdivision control violation problems. This report recommends the levy of a substantial fine and removal of the title effect as a more satisfactory solution.

Recommendation 12 would not allow adverse possession in the land titles system. This report considers the lack of an adverse possession concept to be a serious deficiency of that system. Therefore, it is recommended that adverse possession be allowed for abandoned land under certain conditions and also for boundary encroachments.

Recommendations regarding land descriptions and boundaries are covered in Chapter VI of the Commission report. This report agrees that the coordinate control system should be used for descriptions of land parcel boundaries. However, a block parcel number rather than a geographic identifier should be used as the basis for indexing land parcels. Property maps will show the approximate size and location of each land parcel. The identifier will serve as the description of the land parcel. Since no description conflicts can arise, this report does not accept Commission recommendation 5.

Commission recommendation 7 is not carried forward. The ability to accept and store precise location information will exist in the recommended system. However, it is not intended to offer affirmation of precise location. The resolution of problems in this area would be a function of the court or an independent tribunal.

Records management is dealt within Chapter VII of the Commission report. The choice of a centralized computer with remote terminals in local offices is at variance with the recommendations of this report. However, the choices differ only in methodology and not in eventual result. The cost/benefit analysis of this report has demonstrated that local and regional computerization is more cost effective than a centralized computer configuration and that courier service is preferable to telecommunication links. Further, the index used for the computer system would be based on the block parcel number. The geographic index derived from coordinate values would be used solely as an internal attribute of the land registration system.

Chapter VIII, Conversion, deals primarily with conversion from the existing systems to an improved land titles system. As such, some recommendations are inappropriate. However, the general sequence outlined for implementing improvements is similar to that recommended in this report. Recommendations 4 and 5 specify the procedures for abolishing unregistered government liens and the need for compensation in the event that interests are extinguished by conversion. This report is also in agreement with those recommendations.

Chapter IX of the Commission report contains four specific recommendations. Recommendation 1 has been largely carried out to-date. No substantial changes have been made to either the registry or land titles system for a number of years. Of course, this report recommends substantial changes and modernization of both systems.

This report agrees with recommendation 2 and does not promote the introduction of title insurance. Recommendations 3 and 4 deal with expansion of staff and improved communication with system users. Both recommendations were already implemented prior to the writing of this report.

D. CONCLUSION AND RECOMMENDATIONS

The detailed recommendations of this report are found in Appendix B, Recommendations for an Improved Land Registration System for Ontario. The major recommendations have already been discussed in the foregoing comparison to the Ontario Law Reform Commission report.

Financial analysis of implementation of all five proposed improvement packages demonstrated a pay-back period between 9 and 11 years based solely on system savings. However, consideration should also be given to the impact on system users and other government agencies.

A number of potential benefits to other government agencies and system users were quantified in the cost/benefit analysis. On an annual basis, the user savings from implementation of each package are as follows:

- legal system improvements, \$7,150,000;
- microfilm document and plan systems, \$50,000;
- certification in the registry system, \$750,000;
- computerized indexes, property maps and activity reports, \$2,865,000; and
- selective and aggregate information reports, \$50,000.

It should be noted that these reflect only those benefits which could be quantified. Other potential savings were identified but could not be quantified. For example, the elimination of duplicate property information and maps maintained by other agencies should result in additional annual savings of over one million dollars. However, the information necessary to quantify these savings was not available and is not included in these estimates.

Based on the system cost/benefit analysis and the utility to system users, this report recommends implementation of all five improvement packages in the following order:

- legal system improvements;
- microfilm document and plan systems;

- certification in the registry system;
- computerized indexes, property maps and activity reports; and
- selective and aggregate information reports.

APPENDIX A

ONTARIO LAW REFORM COMMISSION

REPORT ON LAND REGISTRATION (1971)

CHAPTER X: GENERAL SUMMARY OF RECOMMENDATIONS

APPENDIX A

ONTARIO LAW REFORM COMMISSION REPORT ON LAND REGISTRATION (1971) CHAPTER X: GENERAL SUMMARY OF RECOMMENDATIONS

A. INTRODUCTION

This study was initiated to respond to the recommendations of the Ontario Law Reform Commission Report on Land Registration. Chapter X (pages 80-84) of that Report provides a general summary of the Commission's Recommendations. For reference, it is reproduced below.

B. O.L.R.C. RECOMMENDATIONS

The Choice of the General System - Chapter III

The Commission recommends that an improved land titles system should be the sole system for land registration in Ontario, and should be called the "Land Registration" system.

The Land Registration System - Chapter IV

The Commission recommends that:

1. The existence and ownership of the fee simple absolute, charges, leases (subject to the limitations on length of terms of leases in the existing land titles system), and easements should be affirmed.
2. The owners of claims for which affirmations of existence and ownership are not to be made should be able to register the documents that create their claims.
3. Owners of charges, leases, and easements should be able to register documents that create their claims, without having affirmations made.
4. The owners of claims should be able to register cautions.
5. If any interest for which an affirmation of existence and ownership is not made is created in a registered document and is terminated or appears to be terminated, an affirmation should be made that the interest is terminated.
6. A power to rectify affirmations in appropriate situations should be given.

7. Compensation should be paid for interests that are extinguished by making affirmations without the consent or fault of the owners.
8. With two exceptions the compensation should be unlimited and should represent the value of the interest. The two exceptions are: (1) claims that secure the payment of money should be limited by the value of the land less the value of any prior claims; and (2) the substance of the existing limitation for interests in the land that derive their value from minerals should be preserved.
9. The arrangements for future claims, trusts and concurrent interests in the existing land titles system should be preserved until reports are made about the basic principles of real property law, and trusts.
10. Registration should give priority over unregistered claims or claims registered later, except that registration should give priority over a claim created before the creation of the registered claim only if the registered claim was acquired for value and without fraud.
11. The protection for the priority of short-term leases in the existing land titles system should be continued.

The Claims that Need not be Registered - Chapter V

The Commission recommends that:

1. The liens of the government against specified parcels should be registered to be effective, except the lien to secure payment of municipal taxes and any other debts that are secured and collected through this lien.
2. The liens of the government against all land owned by a debtor should be abolished, except the liens to secure payment of corporations tax and succession duty.
3. The lien to secure payment of corporations tax should secure debts of only current owners in the land registration system.
4. The liens to secure payment of succession duty should secure only duty levied after the death of the current owner in the land registration system.
5. The lien to secure payment of corporations tax should extend only to the fee simple in the land registration system.

6. Consents from the Department of Revenue should be required for a transfer in the land registration system of any interest that is affirmed and that may be subject to the lien to secure payment of corporations tax or the lien to secure payment of succession duty. If a lien is claimed against the current owner, the transfer may be made, but subject to the lien, and the lien should be recorded against the parcel.
7. Writs of execution should secure debts of only current owners in the land registration system, and should be delivered to the appropriate office to be effective.
8. A search should be made at the time of each transfer in the land registration system to ascertain whether writs of execution exist against the owner. If an execution exists against the owner, the transfer may be made but subject to the execution, and the writ of execution should be recorded against the parcel.
9. All by-laws passed under section 30 of The Planning Act, and similar by-laws, must be registered to be effective. These by-laws need not be indexed against any of the parcels affected, but must be kept consolidated and in a reasonably usable form.
10. Any order made by any government department to make changes in land or buildings that includes remedies affecting the land or buildings, and not the owner personally, must be registered to be effective against a bona fide purchaser for value.
11. The affirmations of ownership in the land registration system should include an affirmation that a violation of section 26 of The Planning Act does not deny the ownership.
12. Claims against land governed by the land registration system may not be acquired or extinguished by adverse possession.
13. The policy whereunder rights acquired under The Expropriations Act, 1968-69 are registered against parcels governed by the existing systems should be continued under the land registration system.
14. Statutes containing provisions under which the present and future use and value of land may be affected by an agreement between the owner of the land and the government, should contain a provision, to the effect that the agreement shall not be binding upon the original owner's successors in title unless registered.

Descriptions and Boundaries - Chapter VI

The Commission recommends that:

1. A co-ordinate control system should be established.
2. The extent, design, installation and cost of the system should be determined and shared by the prospective users.
3. The system should be used for indexing parcels and to record the location of monuments; the possibility of use of the system for creation of boundaries by the specification of co-ordinates alone should be explored through more analysis and experimentation.
4. Controls of the general nature used in the existing land titles systems over descriptions, plans and surveys should be continued in the land registration system.
5. Affirmations that no conflicts appear from the terms of other descriptions should be made for all descriptions in the land registration system.
6. Affirmations of the location of boundaries should be an ultimate objective of the land registration system.
7. Affirmations of precise location should eventually be made for most boundaries created in the future and for some existing parcels.
8. Affirmations of approximate location should eventually be made for most existing parcels.

Registration of Title to Land as a Problem of Management of Records - Chapter VII

The Commission recommends that:

1. A computer system should be used for land registration. The major elements of this system are:
 - (a) a record for each parcel should be stored in a central computer. This record should include the name of the owner, and references to the description and current documents. The record should also include, as supplementary information, the date, names of parties, and kind of each current document, and summaries of the terms of payment of charges;
 - (b) the records in the computer should be available in local offices through remote terminals;

- (c) the descriptions and microfilm reproductions of the registered documents should be stored in the local offices;
 - (d) registrations should be made at the local offices for the parcels that are affected;
 - (e) the microfilm reproductions and the changes in the record stored in the computer should be made at a central office; and
 - (f) copies of descriptions and documents for searches should be obtainable by mail.
2. An index that is derived from co-ordinates and designed in co-operation with other prospective users should be used.

Conversion - Chapter VIII

The Commission recommends that:

1. The initial stage of conversion to the land registration system should be composed of,
 - (a) the conversion to the affirmations of title;
 - (b) the conversion to the affirmations of descriptions;
 - (c) the limitation of the liens to secure payment of corporations tax and succession duty and writs of execution to liens against current owners only;
 - (d) the preparation and conversion to the co-ordinate index and the index maps; and
 - (e) the conversion to the computer system.
2. The province should be divided into areas, to be specified by administrative determination, and this initial stage of conversion should be done for all the parcels in each area at the same time.
3. Conversion to affirmations of the location of boundaries should be made during this initial stage only for parcels for which the existing information is adequate. For the remaining parcels, these affirmations should be made later, and only when justified by need and cost.
4. The government liens against specified parcels and the liens against all land owned by a debtor that are to be abolished, should be abolished throughout the province after a reasonable warning period.

5. Compensation should be paid for interests extinguished by conversion, except the liens of the government.

The Registry System, Title Insurance and The Structure of Government - Chapter IX

The Commission recommends that:

1. Because of the recommendations made in this report for the adoption of a new system of land registration, no substantial changes should be made to improve the existing registry and land titles systems pending the adoption of the new system.
2. The use of title insurance should not be encouraged and should not be an element of improvements made in land registration.
3. The executive staff of the administrative staff for land registration should be greatly expanded.
4. The executive staff should have more extensive and permanent arrangements for communication with the legal profession.

APPENDIX B

RECOMMENDATIONS FOR

AN IMPROVED LAND REGISTRATION SYSTEM

FOR ONTARIO

APPENDIX B

RECOMMENDATIONS FOR AN IMPROVED LAND REGISTRATION SYSTEM FOR ONTARIO

Recommendations for improvement of the land registration system have appeared throughout this report. For reference, they are consolidated in this Appendix. The basic recommendations of the report are:

- the Province shall retain responsibility for land registration;
- both the registry and land titles systems shall be retained, at least in the short term;
- both systems shall be improved to the extent possible;
- a single system for land registration shall be used only if, after improvement to both, one system proves clearly superior; and
- five improvement "packages" shall be implemented.

A. THE CONCEPT OF IMPROVEMENT PACKAGES

Many of the potential improvements depend upon prior implementation of other changes. For example, computerization of land parcel information is practical only after assignment of unique parcel identifiers. This constrains the order in which improvements can be made.

Dependent improvements have been grouped into related "packages". Five major improvement packages are recommended:

- legal system improvements;
- microfilm document and plan systems;
- certification in the registry system;
- computerized indexes, property maps and activity reports; and
- selective and aggregate information reports.

The specific improvements to be implemented within each package are identified in the remaining sections of this Appendix.

B. LEGAL SYSTEM IMPROVEMENTS

Legal system improvements benefit both system operation and system users. This improvement package should be implemented immediately.

However, a number of changes to present practices and procedures will result. Both system staff and users must be aware of these changes. Procedural guides and user manuals must be available at, or prior to introduction of the changes. Moreover, detailed procedural guides covering every aspect of system operation should be provided. This will ensure uniform practices and procedures in each office. A document or plan acceptable in one office will be acceptable in all other offices.

A number of changes to the registry system are recommended:

- as a minimum, the search period shall be reduced to 40 years or the first prior independent conveyance if none have been registered in the intervening period;
- immediate effect will be given to discharged and expired interests.

Land titles legislation will be improved to clarify the provisions dealing with cautions, notices and leases.

A number of improvements apply to both systems. The general law regarding restrictive covenants and easements will be clarified and improved. Another significant change will be to provide a complete title and survey record in both systems.

The specific improvements to provide more complete information are:

- the number of unregistered government liens shall be reduced. These include:
 - specific government liens will have to be registered with the exception of municipal taxes;
 - general liens will be abolished, except for corporations tax and succession duty.

Succession duty and corporations tax shall apply solely against the current owner. Corporations tax clearance will be required for every conveyance by a corporate owner.

The title effect for violations of the subdivision control provisions of The Planning Act will be removed. It should be replaced by a substantial fine.

Violation of municipal set-back and side lot clearance by-laws should be registered to be effective.

In order to form a more complete survey record, all plans affecting ownership and conveyancing shall be registered. Field note information shall be incorporated in all survey plans entering the system. Use of the Ontario grid system coordinates shall be mandatory for all plans dealing with areas where evaluated control stations are present in sufficient density. The use of coordinates shall be encouraged throughout the Province.

Shorter standardized forms will benefit both system users and operating staff. This will involve:

- the use of a standardized cover page containing all abstract-related information;
- shortening the legal content of documents and providing standardized wording;
- eliminating some obsolete concepts such as personal seals; and
- eliminating many affidavits.

In both systems, the rules governing assurance and compensation will be clarified and improved. The following affirmations will be provided:

- proper recording, in both systems;
- proper completion, in both systems;
- proper execution, in the land titles system only;
- legal effectiveness, in the land titles system only;
- useful existence, in both systems.

Neither system will provide affirmation of precise location. However, the system will be capable of accepting information defining the precise location of boundaries.

Compensation will be paid for the assurances offered. It will be paid on a comprehensive rather than limited basis. The principle of a compensation fund will be extended to the registry system. The amount in the fund will not be the total liability of the government. Amounts exceeding the value of the fund should be paid out of general revenues. However, the compensation paid for any individual claim shall be limited to three times the value of the surface rights alone.

Normal procedure shall be to attempt recovery from the party, if any, who caused the loss. However, in the event of a system recording error, it will be possible to proceed directly against the fund.

Adverse possession will be allowed in the land titles system for:

- abandoned land, under certain conditions; and
- boundary encroachments.

A number of improvements will provide better and faster service. Same-day registration service will be given to simple, straightforward documents. Complex documents would not be guaranteed same-day registration service. However, a pre-approval process for complex documents will be instituted to allow registration to occur on the required day. "Retroactive" registration in the land titles system will be discontinued.

C. MICROFILM DOCUMENT AND PLAN SYSTEMS

Paper records for both documents and plans shall be removed from the local office. Microfilm will be used to retain the original form and signatures of documents and plans.

Three regional microfilm centres will be set up to provide microfilm services and support for local offices. Two types of microfilm will be processed. Documents will be stored on 16 mm microfilm. Plans will be stored using 35 mm microfilm images.

Document microfilming will continue in the local offices. Plan microfilming will be performed in the regional centres.

Roll film cartridges and high speed readers will be used in the local offices. The approximate location of documents will be indexed on each cartridge. Users will request and be charged for each microfilm cartridge. However, paper copies of the microfilm images will be provided at no charge from the microfilm readers.

Plan white prints will be made from plan microfilm records at the regional centres. However, each office will be provided with a microfiche viewer/printer in the event that copies of portions of plans are required and white prints are not available.

Once original plans and documents are microfilmed, they will be removed from the office or destroyed.

D. CERTIFICATION IN THE REGISTRY SYSTEM

All new plans of subdivision entering the registry system should be certified using the present Certification of Titles Act. All areas of the Province to which land titles has not been extended will be designated as certification areas. New subdivisions will then be processed under the first applications procedure in land titles and the certification procedure in areas where only the registry system is available.

Previously registered registry plans will be certified by the system. A statement of ownership at the time of registration and encumbrances outstanding at the time of certification will be provided.

E. COMPUTERIZED INDEXES, PROPERTY MAPS AND ACTIVITY REPORTS

This is the most obvious area of change in the system. It involves computerization of land registration information and automation of the local offices.

Computers will be used to maintain property maps, manipulate index entries and produce activity reports. In each case, the form of the original plan or document need not be retained. Rather, information extracted from documents and plans will be processed by computer.

As a first step, property maps for a local office will be produced on a regional computer. Automated processes will be used for both production of initial property maps and updating of existing maps on an on-going basis.

Property maps will have the following characteristics:

- all registered land parcels are shown;
- the parcels shown exist on the ground;
- the relative location of a parcel to its neighbours is correct;
- a land parcel illustration (to scale) has approximately the size and configuration of the property on the ground; and
- map parcels are related to the ground through the Ontario Coordinate Grid System.

Property mapping will be performed in 9 regional centres. There are four major stages to automated property map preparation and maintenance:

- development of the necessary hardware and software techniques;
- pilot project testing by preparation of complete property maps for one medium sized office;
- relatively fast conversion of the initial 70% of land parcels for an office; and
- verification of the descriptions of all parcels and conversion of the remaining 30% as soon as possible thereafter.

Digitizing of boundary information will be used for initial map preparation. Direct data entry will be used for subsequent updating of property maps. Much of the initial data capture can be subcontracted to outside agencies. Where suitable maps are available from other agencies, such as the Ministry of Revenue, they will be used in initial map preparation.

As part of the property map preparation, unique land parcel identifiers will be assigned. A block parcel number will serve as the unique identifier. The block parcel identifier will be derived as follows:

- the external boundaries of the Province would be defined using Ontario grid system coordinates;
- within this framework, the boundaries of counties, local office areas and townships will be defined;
- within township, blocks based on natural features such as roads, rivers and railways will be defined;
- the Ministry of Transportation and Communications transportation network geocode will be used to define these nature features.

Each land parcel within the block will be fitted into the overall block framework. This will be accomplished by a "rubberizing" process on an interactive graphics terminal. Each land parcel within the block will be assigned a unique number. The land parcel identifier will then be composed of a block number unique within the Province and a parcel number unique within the block. Assignment of a unique land parcel identifier allows parcelization of the remaining computerized information.

Since the property mapping information is based on the Ontario grid system coordinates, each land parcel will be directly related to the ground. Its boundaries have geographic significance. The approximate centre of each land parcel will be identified. This geographic coordinate (the geocentre) will be captured and used as an internal identifier to allow retrieval of information by geographic area.

Up-to-date property maps will be maintained in the regional centre. When a local office property map contains a substantial number of updates, a revised property map will be forwarded from the regional centre to the local office. In the interim, pencil updates will be made to the property map in the local office. The most current state of land division will always be reflected in the local office property maps.

Plan examination will be carried out primarily by local office staff. This is consistent with the provision of the majority of services to users directly from the local office. Three types of plan evaluation will occur:

- examination for completeness of submission;
- examination for accuracy of calculations; and
- examination for conformity to survey practice.

Within examination for conformity to practice there are five levels of examination:

- limited checklist;
- technical evaluation;
- general evaluation;
- in-depth examination; and
- field examination.

Only the examination for accuracy of calculation, field examination and in-depth examination would be performed in the regional centre. Plan data capture will occur as part of the examination for accuracy of calculation.

On completion of property mapping for the local office, local office automated systems can be implemented. Each office will be equipped with a cash register, enquiry pads, data entry terminal, local files and a minicomputer processor.

The local files will contain information for each land parcel within the local office jurisdiction. The cash register will be used to update the status of these local files to reflect registrations which have occurred since the last updating of index pages.

The data entry terminal will be used to capture abstract entry information from document and plan cover pages. This information will be forwarded to the regional centre where printed index pages will be produced to reflect registration activity occurring in the local office.

Local office enquiry pads will be used to enquire into local office files. Since the local office files were updated by processing of registrations through the cash register, the enquiry pads will display the effect of registrations immediately after a registration number has been assigned by the cash register.

A cover page file for subsearching will be available at the front counter. Registration numbers displayed on the enquiry pads will lead the system user directly to the cover page required to determine dealings with the land parcel in which he has an interest. This can be verified since the block parcel number will be used both as the legal description on the cover page and for enquiry purposes.

It is also expected that both deposit and charge accounts will be implemented to simplify the financial arrangements for both office staff and system users.

Since the land registration information will be computerized, access to information must be controlled. Access to individual land parcels will remain open as at present. Access to the complete information files will be restricted.

Of course, internal reports dealing with operation activity will be produced at the regional centre to assist in operational control of the system.

F. SELECTIVE AND AGGREGATE INFORMATION REPORTS

The last series of recommendations deals with introduction of new services.

To simplify the use of the system and assist judgement creditors in locating land interests of their debtors, a number of cross-reference indexes will be provided. The land parcel identifier will be referenced to:

- owner name;
- street address; and
- former parcel identifier.

Judgement creditors will be further assisted by implementation of a recording system which will notify a creditor whenever a name similar to his debtor acquires an interest in land. Additional information such as sex and birth date will also be included to allow easier identification of judgement debtors. After implementation of these improvements, registration of the writ against a particular land parcel would be required in order for it to be effective.

At this stage, the ability to manipulate large amounts of property map and title information would be implemented. A selective reporting ability would be included. This would allow:

- the ability to select information by geographic area;
- the ability to perform statistical analysis;
- the ability to combine geographic and title information in either printed or map form.

Since the system information is computerized, machine readable information can now be supplied to other agencies. Requests for information can, therefore, be serviced on an overnight basis. Normally, printed information such as cross-reference indexes would be supplied in the form of monthly updates and yearly consolidations.

The cost of these new services could be easily recovered by imposition of a very modest fee structure.

APPENDIX C

G L O S S A R Y O F T E R M S

(many definitions have been taken or adapted from Land Law and Registration by S. R. Simpson)

Adverse possession	an occupation of land inconsistent with the rights of the true owner.
Affidavit	a written statement in the name of a person who swears to or affirms it before a person having authority to administer an oath.
Bearing	the direction which any point lies from a point of reference, especially as measured in degrees from a quarter of the compass.
Boundary	a limit-line of a parcel of land.
Caution	a notification on the parcel register in the land titles system forbidding transfer or charge of the property without the consent of the cautioner.
Computer Output Microfilming (COM)	the process of translating computer generated information into human readable language and recording it on microfilm.
Concession	a tier of township lots.
Conveyancing	that part of a lawyer's business which relates to the framing of legal documents intended to create, transfer, or extinguish rights in land.
Co-ordinates	measurements used to define the position of a point by its distance from a pair of intersecting straight lines.
Crown Grant (Patent)	lands of the Crown granted to private individuals by letters patent.
Deed	an instrument in writing which is signed, sealed, and delivered.
Discharge of Mortgage	a release by the mortgagee of all his rights under the mortgage.

Dominant (tenement)	land to which is attached the benefit or a right in another's land.
Dower	the right of a married woman in real property owned by her husband which cannot be defeated by the husband disposing of the property. Abolished in Ontario except for rights which had vested prior to March 31, 1978.
Easement	a right enjoyed by the owner of land (the dominant tenement) over the land of another (the servient tenement).
Encumbrance	a claim, lien, or liability attached to property, e.g. a mortgage.
Grant	a general word signifying the transfer of property; the grantor is he who transfers to the grantee.
Hard copy	a paper document or reproduction of it which can be read without optical aids.
Joint tenancy (ownership)	ownership which is simultaneously vested in more than one person and passes on the death of one to the survivor or survivors by right of survivorship.
Land registration system	a system or systems maintained by the state for recording interests in land.
Lease	a contract by which the right to the exclusive possession of land is granted by the landlord or lessor to the tenant or lessee for a consideration, usually a rent.
Leasehold	land held under a lease.
Map	a cadastral map is one which shows how a locality is divided into units of ownership; a topographical map depicts what actually exists on the ground, i.e. surface features.
Metes and bounds	the description of a parcel of land from point to point according to recited directions and distances.

Microfiche	a section of film containing images in rows and columns. Fiche is normally on 105 mm film and each fiche is 4" by 6" in size. Reduction ratios are normally 24x, 42x and 48x.
Monument	any object fixed in the soil and used as a means of ascertaining the position of a boundary.
Mortgage	transfer of the legal estate to secure repayment of a loan or of a debt.
Notice	knowledge or imputed knowledge; notice can be either actual, or constructive (where knowledge of the fact is presumed or imputed by law); the doctrine of notice is that a person who acquires an estate, even although for valuable consideration, with notice, actual or constructive, of a prior equitable right, takes subject to that right.
On-line	a computer system in which information reflecting current activity is introduced to and available from the computer as soon as it occurs. E.g. a document registration is recorded immediately after the data is entered.
Ontario land surveyor	a person qualified to practice land-surveying in Ontario.
Parcel	a piece (continuous stretch) of land.
Plan	a surveyor's drawing showing the layout of lots, streets, etc., which when properly registered may be referred to in describing in subsequent documents the land.
POLARIS	the name for the new system of land registration described in this report. An acronym for Province of Ontario Land Registration Information System.
Power of attorney	authority of one person to execute documents or carry out transactions on behalf of another.
Real property, realty	property in the form of land.

Registry system	a land registration system in which documents are recorded but, with limited exceptions, without any assurance that the interests claimed are legally effective. Currently, in Ontario, the system of registration under The Registry Act.
Restrictive covenant	an agreement whereby one landowner for the benefit of another restricts the use of his land in a particular way.
Subdivision	the process of dividing an existing parcel of land into smaller parcels.
Title	the evidence of a person's right to property.
Trust	a relationship based on confidence whereby property is vested in or held by one person for the benefit of another.

APPENDIX D
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